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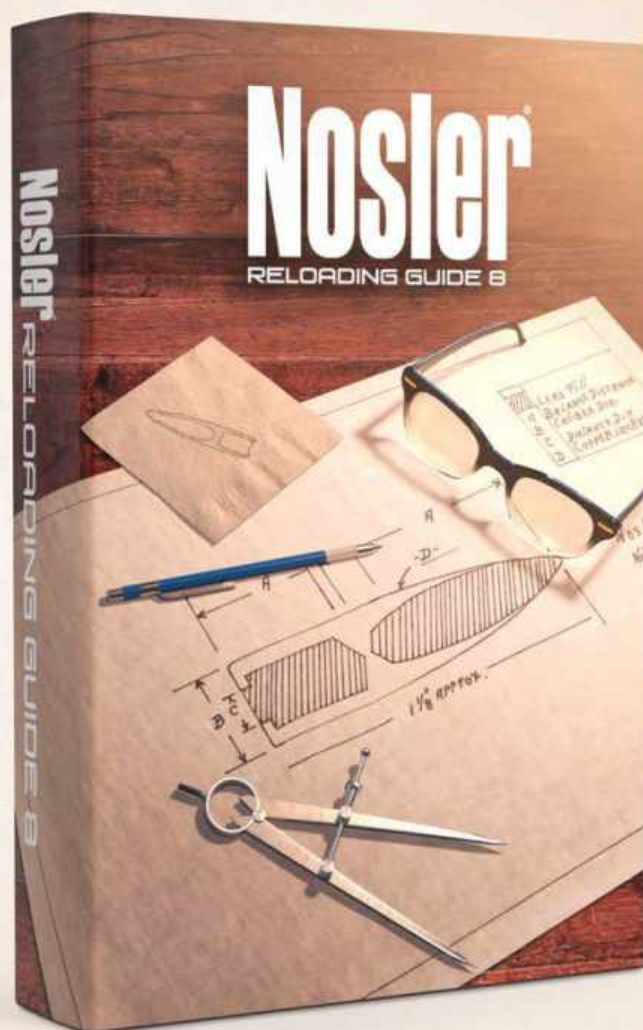
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On the cover . . . A Bergara Premier 16 Classic 6.5 Creedmoor topped with a Meopta 1.7-10x 42mm scope. Photo by G. Hudson.

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RIFLE
Sporting Firearms Journal

ISSN 0162-3593

Volume 48 Number 1
Issue No. 284 January 2016

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Circulation Manager - Kendra Newell
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Subscription Information: 1-800-899-7810
www.handloadermagazine.com

Rifle® (ISSN 0162-3583) is published bi-monthly by Polacek Publishing Corporation, dba Wolfe Publishing Company (Don Polacek, President), 2180 Gulfstream, Ste. A, Prescott, Arizona 86301. Telephone: (928) 445-7810. Periodical Postage paid at Prescott, Arizona, and additional mailing offices. Subscription prices: U.S. possessions - single issue, \$5.99; 6 issues, \$22.97; 12 issues, \$39.00. Foreign and Canada - single issue, \$5.99; 6 issues \$29.00; 12 issues, \$51.00. Please allow 8-10 weeks for first issue. Advertising rates furnished on request. All rights reserved.

Change of address: Please give six weeks notice. Send both the old and new address, plus mailing label if possible, to Circulation Dept., *Rifle*® Magazine, 2180 Gulfstream, Ste. A, Prescott, Arizona 86301. POSTMASTER: Send address changes to *Rifle*®, 2180 Gulfstream, Ste. A, Prescott, Arizona 86301.

Canadian returns: PM #40612608. Pitney Bowes, P.O. Box 25542, London, ON N6C 6B2.

Wolfe Publishing Co.
2180 Gulfstream, Ste. A
Prescott, AZ 86301
Tel: (928) 445-7810 Fax: (928) 778-5124
© Polacek Publishing Corporation



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PAUL A. MATTHEWS

SPOTTING SCOPE by Dave Scovill

Paul Matthews was such a widely known and well-respected figure in the black powder cartridge-shooting world that practically everyone either knew Paul personally or had read his many magazine articles or books. It is with great sadness then, that I relate his passing on September 2, 2015.

One could not meet Paul and fail to see his great enthusiasm for the sport of Black Powder Cartridge Silhouette. He worked tirelessly at improving the shooting of his BPC rifles and shared his experiences freely with others through his books. It was truly a passion of his, one that he followed long after many shooters would have retired from the active match scene.

Paul was a prolific freelance writer of 50 years experience, writing 16 books and numerous magazine articles for a variety of publications, including the *Pennsylvania Game News*. He was also a World War II veteran, serving in the U.S. Navy aboard the *USS Appalachian* from June 9, 1943, to September 10, 1946. He was later employed by the Ingersoll Rand Company in Athens, Pennsylvania for 33 years and retired as manager of Technical Publications. Among his many literary efforts



(NOVEMBER 4, 1925 – SEPTEMBER 2, 2015)

was a book of his memoirs during his service in World War II titled *Dear Folks*. Paul liked to write, and he was good at it.

I feel lucky to have met Paul at several black powder silhouette matches; we always had lively conversations about various shooting topics. Paul's mind was continually open to new ideas, and his greatest joy was coming up with a new wrinkle on an old technique. He was truly a 'gun crank' in the best sense of the word.

Paul was an active shooter and

writer for most of his life. As such, there is much about him that I did not know. What I did know was that he was an absolute gentleman and a true rifleman. He will be missed and the black powder world is diminished.

– Steve Garbe, Editor
Black Powder Cartridge News

THE KRAG

It was a typical Saturday morning in late summer 1956. I was busy catching up on chores around the house when my stepfather, Lester, drove up the hill and turned into the driveway at our home on Pike Street. He had been over at the Glide Saw Shop, picking up his chain saw that was dropped off on the way home from work on Friday. He was busy taking the saw and equipment out of the back of the truck, and asked for a hand.

He had a curious smile on his face when he opened the door of the truck and pointed to a rifle lying on the seat, saying, "Take that in the house." I had no idea what type of rifle it was, but it looked worn. Turning it over, the first thing I noticed was the box protruding from the right side of the action. Overall, it had a much smoother finish than the Japanese Arisaka that Lester brought home after mustering out of the U.S. Navy.

I went into the house and was admiring the rifle when Lester came in, still smiling and almost laughing when he said, "That's a Krag, probably used in the Indian Wars," as he put a box of Lyman 310 loading dies on the coffee table.

Lester sat down in his chair, explaining that it was a .30-40 Krag (aka .30 U.S.) carbine that used



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... says Anthony Owen of Thornton, CO. "Some people say VLDs are not made for close range. Both of these bucks were harvested with shots taken less than 50 yards away." Anthony (right) and hunting buddy, Scott Hagan (left) took these two bucks within yards of each other.

Gear Specs:
Model: Remington 700 XCR II

Load Specs:
Bullet: 7mm 168gr VLD

Cartridge: 7mm Rem Mag



The Arisaka 7.7mm rifle (top) is shown with the Model 1899 .30 U.S. Krag carbine. Both rifles had recoil pads installed in the 1950s.

a 220-grain bullet, much heavier than those we used in the Arisaka. He took the rifle, opened the bolt and showed how the box opened and loaded, then snapped the box shut, adding that it was the slick-est bolt-action rifle ever made. He went on to explain how the safety worked, and the knob at the rear of the bolt could be used to un-cock or cock the action when the bolt was closed. All in all, it was quite an improvement over the 7.7 Arisaka I used to hunt deer with, but assumed it would be Lester's hunting rifle.

That fall I managed to take my first deer with the Arisaka, and Lester used the Krag to take a fine four-point blacktail on his way home from work one day. Later that year, Lester used a Remington load with those long, fat 200-grain slugs that probably didn't exceed 1,800 fps in the 22-inch Krag barrel, to take a bull elk near the area where he was felling (falling) timber.

The following year Lester bought Mom a Remington Model 760 .257 Roberts, which I don't believe she ever hunted with, besides having it in camp when Lester and I were away. I was allowed to use it when time away from work or school allowed for hunting small game or deer. Lester used those Remington factory .30-40 loads for the Krag, and the time-consuming process of fireforming .30-06 brass for the 7.7 Arisaka, along with the use of the somewhat undersized .308-inch bullets in the 311-inch bar-

rel, was a bit discouraging when compared to the ease of making up handloads for the .257 Roberts or the Krag. When the family traveled to eastern Oregon to hunt, however, I used the 7.7.

I went off to college in 1962 and from there directly into the U.S. Navy. The years slipped by, consumed by life chores and sharing the outdoors with my wonderful children, Jason and Alicia. When Lester died in November 2014, all I knew for certain was that my step-brother had the rifles, but he died a few months before Lester, who had named Alicia as the executor of his estate. Whether the two estates were linked was unknown, until Alicia asked if I knew anything about "some rifles."

During the time between when Lester brought the Krag carbine home and the 59 years until Alicia asked about the rifles, I searched for a Krag carbine at gun shows and "for sale" listings in various publications, all to no avail. There were a few, but in nearly new condition and pricey. I was looking for a serviceable rifle/carbine that didn't command collectors' prices, so there was no risk when it would, quite likely, get dinged a bit in the field.

Early on in the process of looking for a used but not abused carbine, I learned that it came along a bit too late to be involved in the "Indian Wars," as Lester joked, but was the shortest serving military rifle, from 1892 to the transition

(Continued on page 54)

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6.5-300 WEATHERBY MAGNUM

MOSTLY LONG GUNS by Brian Pearce

It has been more than 70 years since a young Roy Weatherby (1910-1988) began developing high-velocity, wildcat cartridges for hunting. Eventually he began building custom rifles based on a variety of actions (1903 Springfield, Winchester Model 70, Mauser 98, etc.), and by 1957/58 he had designed and begun producing the famous Mark V rifle, with manufacture soon being moved from California to Germany and then Japan, but it is now manufactured by Weatherby in its Paso Robles, California, facility. Soon Weatherby's proprietary cartridge lineup included most popular calibers from the .224 through the .460 Weatherby Magnums, most of which were adopted by SAAMI in 1994.

In spite of offering a cartridge for almost all calibers, there has been an "obvious gap" between the .257 and .270 Weatherby Magnum cartridges. With the steadily growing popularity of the 6.5 (.264

inch) calibers in the U.S. among hunters and competition shooters, it became clear it was the time to develop a Weatherby version, the 6.5-300 Weatherby Magnum, available by early 2016.

As its name implies, it is based on the full-length .300 Weatherby case (itself based on the .300 H&H Magnum case blown out) necked to 6.5. It retains the traditional double-radius shoulder that is associated with other Weatherby designs. With a powder capacity of 99.6 grains (measured in preproduction cases with water level to the case mouth), it promises to maintain Weatherby's unofficial "high-velocity" trademark. Barrel and throat life will probably be short, but this is not a varmint cartridge designed for high-volume shooting; rather, it is a true magnum big game hunting round intended to offer high velocity, extremely flat trajectory and outstanding field performance.

Early stated velocities of fac-



The 6.5-300 Weatherby Magnum will be available in the Mark V rifle. Pre-production ammunition utilized the Barnes 127-grain LRX bullet at roughly 3,500 fps.

tory loads indicate that the Barnes 127-grain Long Range X-Bullet will reach 3,531 fps, a Swift 130-grain Scirocco II at 3,476 fps or a Swift 140-grain A-Frame at 3,395 fps. If these velocities are actual (from a 26-inch barrel) from production ammunition, this will be the fastest commercially available, SAAMI specification 6.5 cartridge to date.

While the 6.5-300 Weatherby Magnum is new for 2016, for history's sake it should be mentioned that Roy Weatherby developed and experimented with this same cartridge back in the 1950s. Why it was never offered commercially is unknown, but my best guess is that it was probably due to the lack of really suitable propellants and bullets. Today there are several outstanding powders that should make this cartridge fast, while bullet selection for long-

range hunting and match target work is broad.

Rough calculations indicate the Barnes 127-grain LRX bullet traveling 3,531 fps and sighted 2 inches high at 100 yards will theoretically strike zero at approximately 300 yards and only drop around 7.5 inches at 400 yards. Further testing will be necessary to verify these rough figures, but the new 6.5 Weatherby Magnum is flat-shooting by any measurement.

It should be mentioned that several relatively new 6.5 calibers have become unusually popular in recent years, such as the 6.5 Grendel, 6.5 Creedmoor, .260 Remington, 6.5-284 Norma and .26 Nosler, but several older cartridges have also seen renewed interest, such as the 6.5x55mm Swedish Mauser, 6.5 Remington Magnum, .264 Winchester Magnum and others. Modern 6.5mm bullets usually offer high ballistic coefficients and low drag, which has made them extremely popular with many long-range competitors. Hunters have



The 6.5-300 Weatherby Magnum will first be offered in the Mark V Accumark and Ultra Lightweight rifles, which are guaranteed to produce MOA accuracy.

found them useful on big game, as such bullets offer great sectional density and recoil is comparatively modest, even the recoil generated by the large 6.5-300 Weatherby Mag-

num. As a result of the above virtues, bullet manufacturers have steadily expanded their match and hunting bullet product lines. I

(Continued on page 53)

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MORE BPCR TROUBLE SHOOTING

DOWN RANGE by Mike Venturino

As a 30-year veteran of the NRA's BPCR Silhouette game, I am continually amazed at how well the rifles shoot, considering they were designed in the late 1800s, equipped with aperture sights front and rear and fire cast bullets over black powder. When fired in calm conditions by an expert shooter, most will hold groups to near minute of angle out to 500 meters (547 yards). That said, it is also amazing how easily some rifles can get out of whack. Here's a for instance: It was my go-to silhouette rifle for several years. With it I won or placed well in several events in Montana and won the Arizona scoped state championship with it in 2007.

Then came the scoped national championship in 2011. The first day I hit 14 of 15 pigs, turkeys and rams along with five of the off-hand chickens. A score of 47 put me in second place overall. Starting out on rams the second day, I again hit 14, slew only three off-



A properly crowned BPCR muzzle will have fouling evenly spaced around it.

hand chickens but once more got 14 pigs. The last target of the day was turkeys. Only seven went down. I still ended up first in AAA class, but until those turkeys I had a chance for top spot.



After Mike had the Lone Star's muzzle crowned, groups centered up, and he was able to toss the sight shim.

I blamed myself, but it was not me. The same rifle turned in an extremely poor showing on the first day of the Arizona state championship the following November. It was packed away and my back-up rifle used. Later an examination showed that the miscreant rifle's hammer was slightly touching the breechblock as it fell, as evidenced by a peened spot on the hammer nose. The manufacturer gladly repaired the rifle, and I thought all was well. It wasn't. In the first match of the 2014 season in Montana, I fired the lowest score in over 10 years with it. It is still sitting in the rack waiting for time for a careful examination and to shoot it extensively on paper to determine the problem. I'll just about bet the problem, when found, won't be a big one.

That's what I'm getting at here. It just doesn't take much for a rifle – any precise-shooting rifle – to get out of order with minor bugs. After putting the above .45-70 away, I transitioned to a Remington rolling block with a new Krieger .45-90 barrel. It likewise shot very well for several years, but in 2014 it began throwing high fliers. To

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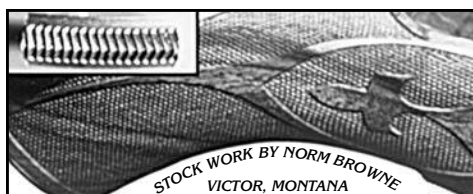


The bottom rifle's muzzle has a common factory-type crown; the one above has been cut with a Brownells crowning tool.

make a long story short, eventually it was determined that the front top tang screw would work loose after only a few shots. Looking at it from the top, when its slot was pointed to about 1 o'clock, the fliers were nonexistent. When it worked loose enough so the slot pointed to about 11 o'clock fliers started. After it was given a dose of Loctite, they quit altogether.

My all-time best BPCR silhouette rifle is probably the Lone Star rolling block .40-65. Despite its excellent grouping ability, one thing that put me off about it was that the Montana Vintage Arms tang sight had to be shimmed in order for the front sight to sit dead center in its dovetail. Otherwise, shots printed to the left, which I attributed to the rifle's tang not being square with the receiver.

Then a couple of years back, a shooting buddy acquired a barrel crowning tool. Watching him use it, I could see that many muzzles were not crowned squarely with the bore. The evidence was that the cutter would leave bright metal on one side of a muzzle while there was still blue on the other. So I asked him to do my rifle's crown, and that was exactly the case. After it was evened up, I was able to throw the brass shim away. R



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CARTRIDGE/CHAMBER HEADSPACE

LIGHT GUNSMITHING by Gil Sengel

An **anyone seriously interested** in rifles will sooner or later acquire old military and sporting arms, perhaps even a wildcat or two. Factory ammunition for most of these is no longer made or never was. Even if old cartridges are found, there is a good chance they won't fire due to age or improper storage over the years. The only way to have a reliable source of ammunition is to handload it. Case forming is often required.

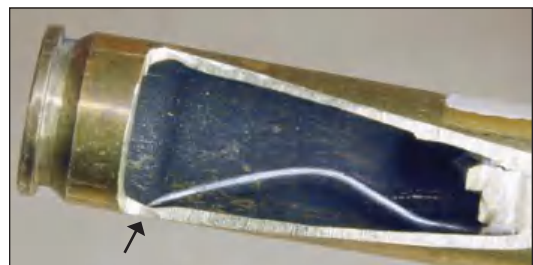
Handloading for old and obsolete rounds is nothing new. What is new is the condition of the rifles themselves. Many are now nearly 100 years old – or older. They have seen many owners. Some were good caretakers while others were only interested in selling them and making a dollar. Bolts and breechblocks have been replaced or altered, as have barrels on military models. This is often impossible to detect. Unscrupulous sellers today polish bores with abrasive



A stretch mark from excessive headspace is just visible on the case at left but plainly visible on the case at right.

paste and chambers with an abrasive cloth to make them “shine like new.” All this can change the way a cartridge fits in the chamber – its headspace.

Why is this important? Improper headspace can cause the cartridge case to break open when fired, allowing high-pressure gas into the action that breaks parts, shatters stocks or worse, depending on the



A stretch groove can be seen inside the case; it can also be felt using the tip of a dental pick, as shown.

particular rifle and the degree of case failure.

No firearms topic is as surrounded by misinformation as the subject of headspace. Some enthusiasts insist no understanding is necessary, because headspace can't be readily altered, an observation that is just plain wrong. (It has some truth for a hunter who owns one rifle and fires only factory ammunition.)

Headspace also has a somewhat different meaning to makers of rifles and ammunition than it does to handloaders of obsolete and wildcat cartridges. To the former it's specified tolerances, factory gauges and reference points. To us it's simply the longitudinal (back and forth) movement of *our* cartridge case in *our* particular rifle chamber when the action is closed. Before getting into methods of measuring this movement, some basics should be noted.



Left, the shim disk is held to the case head by a dab of grease. The shim can also go in the recessed face of the bolt. Below, one method of determining headspace uses cases, shim stock and disks cut from it.



Brass with primers backed out may indicate headspace issues. In this case, however, working pressure was too low to push the case back against the breechblock.

Rimmed cases contact the chamber on the front surface of the rim. For belted cases, it's the tiny front edge of the belt. Regarding rimless designs, we *think* the point of contact is some place on the shoulder, usually called the "datum line." If you suspect making a cartridge case that perfectly touches the chamber at such a point looks impossible, it is.

There are two types of rimmed cartridges. They are defined by operating pressure. The .303 British and .30-30 Winchester are examples familiar to all riflefolk.

When a .303 is fired, the firing pin first drives the case into the chamber until stopped by the rim. The primer fires, igniting the powder, and pressure builds, forcing the case walls to expand against the chamber where they grip tightly. As pressure increases further, the case head, which is solid and can't expand, is pushed backward until stopped by the bolt face. This movement is "head-space." Brass will spring back a couple thousandths of an inch when pressure drops to allow for case extraction. Any more movement deforms it permanently, thinning and forming a stretch ring just above the solid case head.

For a previously unfired case, stretching of .015 inch or so can be tolerated without failing. If handloading is intended, far less stretch is acceptable, because if the case is now full-length resized, any stretch will be cumulative.

How can it be determined before the first firing how much a case will stretch in a chamber? There are two methods. The first requires cutting disks slightly smaller in diameter than the base of the case in question from .003, .004 and .005 inch steel or brass shim stock available from auto supply shops. These thicknesses allow combinations from .003 to .020 inch in .001-inch increments. They are affixed by a dab of grease to the head of a full-length sized case in single-shot or break-open rifles, and inside the recessed bolt face of bolt, pump or lever rifles. The firing pin assembly must be

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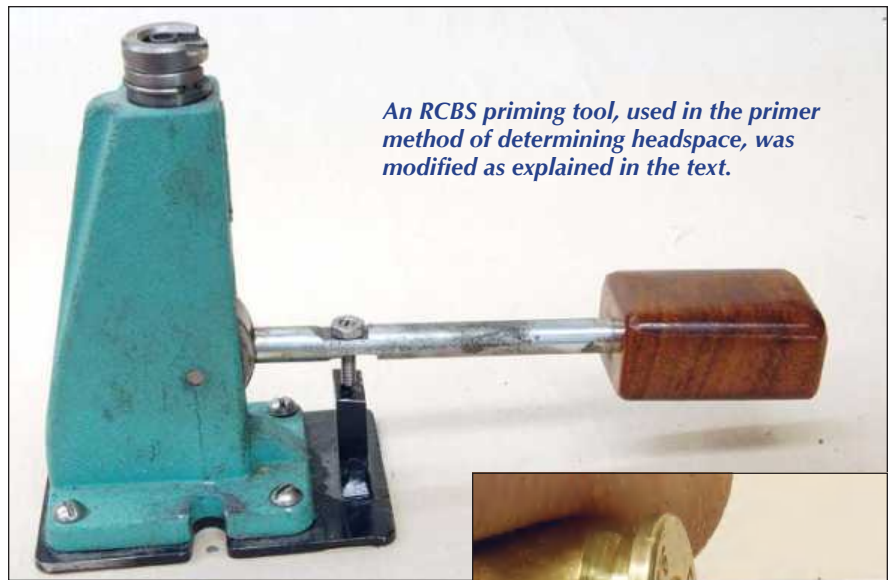
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removed from bolt guns in order to feel the resistance to closing produced by the shims when all headspace has been removed.

If the shim stack amounts to over .005 inch, headspace is too much for handloading and long case life. To correct this, expand the case neck one caliber then size back down in the full-length sizer, adjusting the die down a small amount at a time until the action closes with enough resistance to be clearly felt. When loaded and fired, the shoulder forms forward and the case now headspaces on it instead of the rim.

Another method is to use a seated primer in place of the shims. I have used an RCBS primer seater attached to a homemade base having an upright welded on beneath the handle. A screw and locknut through the handle allow adjustment of seating depth. A primer is seated, say, .015 inch above the case head as measured by a dial caliper. If the rifle action doesn't close, adjust the screw to

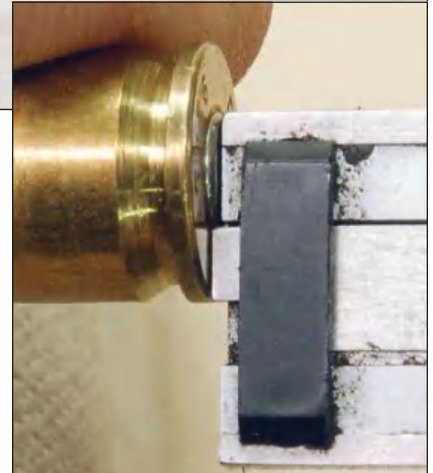


An RCBS priming tool, used in the primer method of determining headspace, was modified as explained in the text.

seat the primer down .001 inch deeper and try again. Do not force things or the primer may fire. This will scare the cat, alarm everyone within hearing and generally not be helpful.

Regarding the .30-30 Winchester, its firing sequence is exactly the same as the .303, except for the final step. Loaded to roughly 20 percent less pressure than the .303, this is not enough to stretch the case and push the head back against the breechblock. The pressure does, however, act through the flash hole to push the *primer* back against the breechblock. In my experience, virtually all rimmed cartridges fired in lever-guns show primers backed out to some degree, as they all work in the same pressure range. Here headspace has no effect on case life, *so long as factory pressure is not exceeded.*

Everything said for rimmed cartridges applies equally to belted rounds, except there is no low-pressure variety. All are loaded even hotter than the .303 British. Unfortunately, belted cases don't have to be wildcats or fired in old rifles to have headspace problems. The tiny front surface of the belt offers little contact area, and apparently the dimension from front of belt to case head (.220 inch) is hard for ammunition makers to hold. Three .338 Winchester Magnums have been seen that, if brass came from factory loads and was



The action will close at .012 inch as measured by a dial caliper.

full-length sized, would only give one handload before a bright ring appeared above the belt, indicating excessive stretching and incipient head separation. New belted cases giving too much headspace must have necks expanded, then sized back down to correct this. Done correctly, many firings should be expected – if the sizing die matches the chamber well.

Rimless cases, too, are the same as rimmed, having both high- and low-pressure varieties. Most all the old rimless military rounds are of the high-pressure type but contact the chamber at the neck/shoulder junction. If headspace on unfired cases measures excessive, re-form the neck as explained earlier and fireform; now the shoulder will make contact and assure long case life.

Low pressure rimless rounds like the .25, .30, .32 and .35 Remingtons suffer protruding primers like the .30-30. Nothing needs to be done about it unless one wants to. **R**

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TOUGH SCOPES

A RIFLEMAN'S OPTICS by John Haviland

Rows of scopes on a store shelf look fairly much the same, giving little clue as to which ones will endure years of bashes and bumps and a rifle's pounding recoil. Noting a scope's pledge of durability from the manufacturer, however, and selecting one with particular features, goes a long way in picking a tough scope. Unlike a rifle, a scope's mechanisms are hidden from view, so to a point you must rely on a scope's guarantee for assurance it will remain rugged. Most of today's scopes are guaranteed by some sort of a lifetime warranty.

"There are really two types of lifetime guarantees," said Tim O'Connor, consumer services manager at Leupold & Stevens. "A company that builds a scope for \$23 and sells it for \$200 can replace it many times over and still make money," he said. "But the only real way to tell if those internal parts are going to last is to look at the history of a company and its reputation for building a good product."

Leupold's Gold Ring scopes' Full Lifetime Guarantee states: "If your Leupold product doesn't perform as promised, we will repair or replace it for free, whether you are the original owner or not – forever." That pledge stands for Leupold's top-of-the-line VX-6 to its bargain Rifleman scopes.

Hunters should look for several features when considering a scope. O'Connor said big game hunters are best served with lighter-weight scopes, because those scopes are less stressed overcoming inertia from rifle recoil. "It's sort of a whiffle ball effect," he said. The same principle applies when a rifle is dropped, like falling off a four-wheeler – the lighter a scope weighs, the less jarring results to cause damage. A fall like that actually generates less strain on a scope than the recoil of firing a shot. A relatively short scope is



Scopes with tall, exposed adjustment turrets are fine on a target rifle, but they can cause problems on a hunting rifle.

braced more by the rings, with less of the scope hanging out of the rings to bend and break. A smaller diameter objective lens bell also doesn't stick up like a sail on a ship to receive every knock that comes its way.

More compact scopes usually have lower top-end magnification, but that's good, as many hunters select variable-power scopes with too much magnification. "What they should really pay more attention to is the lowest magnification of a scope," O'Connor said. "That low power is going to provide the widest field of view to help a hunter quickly get on a whitetail buck busting out of the brush at 75 yards." Usually more time is available to make a shot at game at longer distances. "But really, all higher power does is give you a better identification of a target on a long shot," he said.

Years ago hunters considered fixed-power scopes – because of their simple construction – more rugged than variable-power scopes. "There are still some die-hards, and they seem to like the fixed 6-power for big game hunting," O'Connor said. "But there is no prac-

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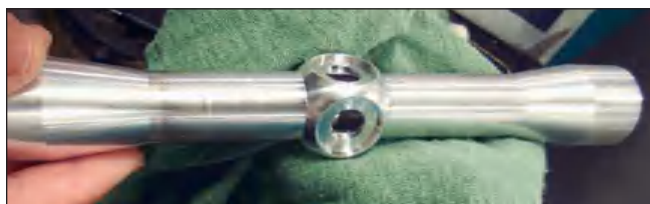
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tical reason to use a fixed-power scope. A variable's advantages far outweigh a fixed-power scope."

Additional features such as parallax adjustment, battery-powered illuminated reticles and tall target-type turrets are best left off a big game scope. Electronics in a scope are usually not guaranteed for more than a couple of years. An illuminated reticle might come in handy in Europe, where hunting is often done in dim light, but that is of no real concern in North America with shooting hour restrictions. Further, parallax is really no concern in a hunting scope, because it is going to move the reticle less than a minute of angle, O'Connor said. With a scope's magnification turned up, the eye will be more precisely centered behind the scope and cause even less reticle shift.

When sighting in a new scope, O'Connor suggests keeping windage and elevation dials as close to the center of adjustment as possible. Turning the dials to their outer edge of correction places stress on the



A freshly machined, one-piece main tube for a Leupold scope would require a major blow to bend it.

erector system. A scope's erector system is essentially adjusted with screws. Turning the windage or elevation screw in results in a positive adjustment. Turn the screw out and a leaf spring(s) pushes against the erector to move it.

For example, while sighting in a new scope, you shoot three shots and the bullets hit 5 inches below aim. You adjust the elevation dial up 5 inches, then shoot a few more shots to verify the bullets hit where you aimed, but bullet impact remained unchanged. In frustration, you adjust the scope up 5 additional inches and fire three more shots. Those bullets hit 10



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inches high. What happened was when the pressure against the leaf spring was released, it failed to push hard enough against the erector to move it. The recoil from the second set of shots jarred the spring and moved the erector system.

O'Connor said this backlash between the leaf springs and erector system can be prevented by turning the adjustment dials all

the way in and out six to a dozen times before using a new scope. Turning the magnification dial back and forth a few times also evenly spreads lubricant throughout the erector system to help it move with a minimum amount of force.

"Really, scopes require no maintenance other than keeping the lenses clean," he said.

Leupold builds a lot of scopes for the U.S. military, and the military wanted to know the failure rate of Leupold scopes. Leupold reported that between 2008 and 2010 its failure rate was seven out of every 100,000 scopes it made.

O'Connor said 98 percent of the scopes Leupold receives back for warranty work from consumers have nothing wrong with them. Limited reticle adjustment, bullet impact shift and parallax are common reasons for the returns. "A lot of times it comes down to the customer's rifle isn't shooting all that well, so they think it must be the scope," O'Connor said.

Leupold technicians pull apart all returned scopes and inspect them. The scopes are mounted on a rifle and test-fired. "Sometimes a leaf spring is replaced, just so we can tell the customer we did something to fix their scope," O'Connor said.

A scope returned a second time is test-fired again. O'Connor calls the customer and explains how the scope performed. Sometimes it's difficult because, to some folks, there is "magic" inside a scope, he said.

From an economic standpoint, O'Connor would rather have a \$5,000 scope returned for warranty work than a \$200 scope. "But we want your scope to never break in the first place, so you won't ever have to send it back," O'Connor said.

Whichever scope you choose from the rows on a sporting goods store shelf, the homework that went into selecting it will go a long way in knowing it will survive a lifetime of thumps, bumps and a rifle's recoil – and never interrupt a hunt. R

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Testing a BPR Classic 6.5 Creedmoor

John Haviland

A few years back, Spanish rifle barrel maker Bergara created a good name for itself with its accurate barrels. Bergara followed with a line of custom rifles in 2012 featuring barrels on Still-er's actions and about any option, if a customer was willing to part with about \$4,000. Bergara USA, a division of Blackpowder Products, Inc., recently introduced its production Premier rifles that sell for about half that price by standardizing some features and dimensions.



The comb is fairly high with some forward pitch, and the rear of the bolt just clears the nose of the comb. The cheekpiece cradles the cheek. A half-inch higher comb would be nice to raise the eye to align with the scope's reticle, but that would be difficult to accomplish without forming a bulbous Monte Carlo comb. A shadow line on the cheekpiece and inletted sling swivel studs add a refined touch. A half-inch thick Pachmayr Decelerator recoil pad topped off the butt with a 13.75-inch length of pull.

The BPR-16 Classic rifle's walnut stock has figure and feather reaching from the butt up through the forearm. The grip has no cap but features the company logo.

The Premier is based on Bergara's new Premium action and is available in a tactical BPR-17 version, a hunting BPR-16 Classic with a walnut stock and the Stalker with a fiberglass stock. The rifles are assembled with Bergara barrels on the new action at Bergara USA's plant in Georgia. A BPR Classic rifle was chosen for review because of its strikingly good looking walnut stock. After shooting three 6.5 Creedmoor factory loads and six bullets handloaded with three powders apiece through the rifle over several weeks, the rifle shot even better than it looked.

Bergara states the rifle's stock is made with grade 5 walnut. The stock is very attractive with waves

of marbling, some feather and contrasting light-to-dark grain flowing the length of the stock. Point pattern panels of cut checkering adorn both sides of the forearm and grip. The checkering provides a sure hold, but the machine-cut checkering is so fine the diamonds are muddled on the test rifle. The grip is fairly slender, oval in cross section, and its angle properly positions the trigger finger. A right side swell fills the palm. The forearm is nicely rounded and fits in the palm of the hand, but with a 10-inch length, it is about 3 inches needlessly long.

The steel one-piece trigger guard/floorplate attaches to the receiver with one screw through the stock at the rear and a second through the front. An aluminum pillar encircles the hole for the rear screw. A square recoil lug at the front of the receiver fits into a mortise inside the stock. An aluminum bedding block is glued into the stock directly behind the cut for the recoil lug and provides a wide surface to absorb recoil. The hole for the front re-

Bergara Premier

ceiver screw runs up through the block. Tightening the screw pulls the round bottom receiver firmly into the aluminum block. The barrel is not free-floated in the stock channel, and the inletting is tight between the barrel and stock.

The Bergara Premium action is based on a Remington Model 700 receiver. Bergara custom rifles use actions from Stiller Precision Firearms, and the Premier action may also be made by Stiller. The test rifle has a Timney trigger that tripped the sear with 2.8 pounds of pull every time. The floorplate

latch is located on the inside front of the trigger bow and pushing it opens the floorplate

to empty the three-round magazine. A tab protrudes from the bottom rear of the bolt shroud and can be seen or felt when the firing pin is cocked. The spiral-fluted bolt and nicely sculpted shroud provide a classic look.

The Premier's bolt looks very similar to a Savage Model 10. Like the Savage, the Premium action has a recessed bolt face with a plunger ejector. A sliding blade extractor is located on the face of one locking lug. Two nonrotating lugs, located behind the locking lugs, slide in the receiver raceway to keep the bolt from binding. The

right lugs are also slotted to fit on a rail in the raceway. Pushing the bolt stop release, at the left rear of the receiver, pivots a finger out of the raceway to allow removing the bolt.

A slotted rail looms over the top of the receiver for a base to mount a scope. Such a rail is fine for tactical rifles, but it seems inappropriate on such a traditional looking rifle as the Premier. Two-piece steel bases would look much better. They would not block off the top of the ejection port, like the rail does, and would remove the difficulty of snapping cartridges into the magazine.

The receiver and Bergara stainless steel 22-inch barrel are finished with black matte CERAKOTE. If the bolt and floorplate had been coated with CERAKOTE, the rifle would be impervious to anything short of a nuclear blast at ground zero.

I used Weaver Six Hole Tactical-Style 30mm aluminum rings to mount a Meopta Meostar R2 1.7-10x 42mm RD scope on the Premier's rail. With the scope in place, the whole outfit weighed 8 pounds, 13 ounces.

The Premier rifle is chambered in 6.5 Creedmoor, .270 Winchester, .308 Winchester, .30-06 and .300 Winchester Magnum. I chose the Creedmoor. The first time at the range with the rifle I shot three different 6.5 Creedmoor factory loads from a benchrest. After dialing in the scope at 25 yards, I moved to a target at 100 yards and fired three Hornady Match cartridges loaded with 120-grain A-MAX bullets. They formed a tight, .53-inch group. Three more bullets spread .57 inch. Hornady Superformance loads with 129-grain SST bul-

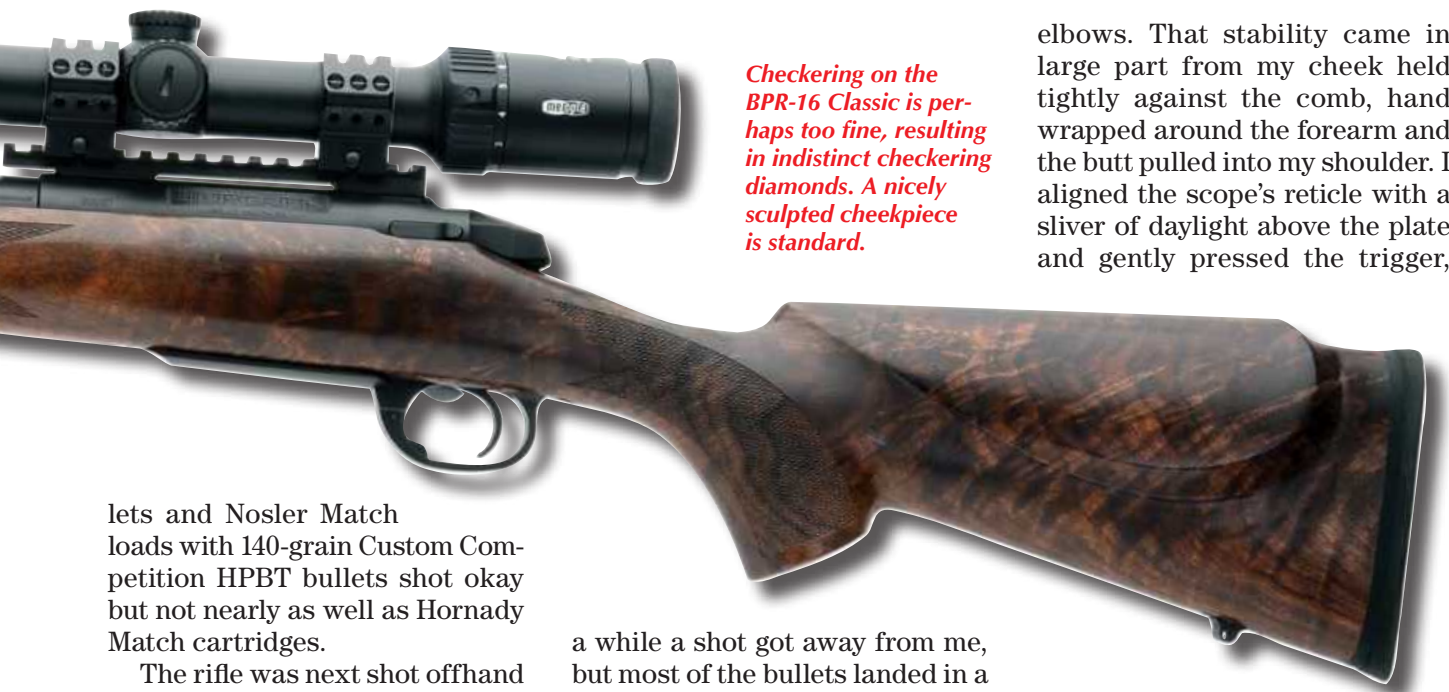
The bolt has a straight handle with a tapered knob that fits the palm of the hand. The rear of the firing pin assembly protrudes when the pin is cocked.



The bolt head looks similar to the Savage Model 10 with a recessed face, plunger ejector, sliding blade extractor and two nonrotating lugs.



Bergara USA is a division of Blackpowder Products, Inc. based in Duluth, Georgia.



Checking on the BPR-16 Classic is perhaps too fine, resulting in indistinct checkering diamonds. A nicely sculpted cheekpiece is standard.

elbows. That stability came in large part from my cheek held tightly against the comb, hand wrapped around the forearm and the butt pulled into my shoulder. I aligned the scope's reticle with a sliver of daylight above the plate and gently pressed the trigger,

lets and Nosler Match loads with 140-grain Custom Competition HPBT bullets shot okay but not nearly as well as Hornady Match cartridges.

The rifle was next shot offhand and sitting for most of a half-hour. Offhand, I pushed the stock butt into my shoulder, slapped my cheek to the comb and fired the moment the crosshairs met the target at 50 yards – like a still-hunting whitetail hunter would when a buck jumps from its bed. Once in

a while a shot got away from me, but most of the bullets landed in a 4-inch circle. It was easy to keep bullets fired in rapid succession in a 3-inch spread at 100 yards while sitting with the rifle supported on shooting sticks.

Switching to prone to shoot a steel plate at 300 yards, the rifle was steady, supported by only my

resulting in a loud slap against the steel. I did miss the plate a few times, mainly from stuttering on the trigger. After shooting 15 rounds at 300 yards, the barrel was very hot.

Immediately after shooting at 300 yards, I returned to the

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Bergara uses Timney triggers on its Premier rifles.

bench and fired three of the Hornady Match cartridges. The 120-grain A-MAX bullets printed in

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Bergara Premier 6.5 Creedmoor Handloads					
bullet (grains)	powder	charge (grains)	overall loaded length (inches)	velocity (fps)	3-shot 100-yard group (inches)
120 Nosler Ballistic Tip	Big Game	43.0	2.775	2,895	1.56
	Hunter	47.5		2,885	.77
	IMR-4895	39.0		2,780	.77
120 Sierra spitzer	Varget	39.0	2.775	2,763	.36
	IMR-4166	38.0		2,740	.33
	H-4350	44.0		2,814	.84
129 Hornady SST	URP	42.5	2.775	2,701	1.28
	A-4350	43.0		2,668	.70
	W-748	39.0		2,707	.82
130 Berger AR Hybrid OTM Tactical	Hunter	43.0	2.800	2,648	2.63
	RL-19	43.5		2,606	.66
	Varget	37.0		2,577	.66
130 Swift Scirocco	IMR-4166	35.0	2.800	2,535	.82
	IMR-4895	36.5		2,622	.57
	W-760	39.0		2,562	.93
140 Berger VLD	A-4350	40.5	2.800	2,452	.80
	IMR-4831	41.0		2,464	1.24
	W-760	40.5		2,550	.75

Notes: Hornady cases and Winchester Large Rifle primers were used with all loads. Velocities were recorded 10 feet in front of the muzzle of the 22-inch barrel. The Meopta Meostar R2 1.7-10x 42mm RD scope was set on 10x. Temperatures varied from 70 to 80 degrees.

Be Alert – Publisher cannot accept responsibility for errors in published load data.

.92 inch. Five more bullets formed an .88-inch group. Even after firing 60 rounds, the barrel showed little sign of copper fouling, and two solvent-soaked patches pushed out most of the powder fouling.

While gathering the fired Creedmoor cases for reloading, I decided not to baby the rifle during a shooting session by cleaning its barrel or waiting for it to cool.

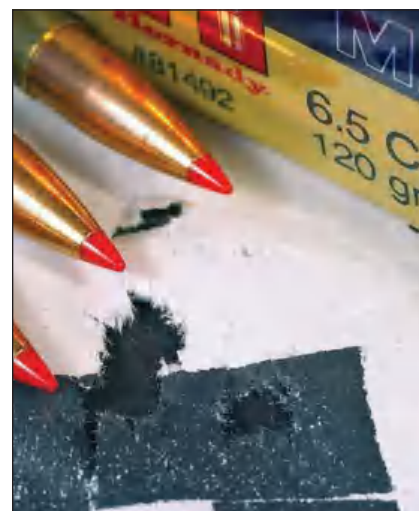
Certainly, that constant accuracy came from a good barrel. Bergara says each barrel starts as a cylindrical bar of stainless steel that must be straight to within .004 inch before drilling. The steel bar is clamped into a four-spindle machine that drills the correct diameter hole. Instead of reaming the hole, Bergara uses three separate honing spindles with diamond-tipped bits to polish the bore's surface to a smooth finish. Rifling is pressed into the barrel by pulling a button through the bore. Groove diameter must differ less than .0002 inch the length of

Bergara Premier 6.5 Creedmoor Factory Loads

bullet (grains)	factory velocity (fps)	actual velocity (fps)	3-shot 100-yard group (inches)
120 Hornady Match A-MAX	2,910	2,824	.57*
129 Hornady Superformance SST	2,950	2,932	1.91
140 Nosler Match Custom Competition HPBT	2,550	2,679	.99

* average of four groups

the bore. Bergara states its barrels are then heat stress-relieved to remove any tension in the metal that



Hornady Match 6.5 Creedmoor 120-grain A-MAX loads shot tight groups.



Sierra 120-grain spitzers paired with Varget powder produced this group at 100 yards.

would cause the barrel to warp as it heats up while shooting. They correctly accomplished the process on the test rifle.

No great pains were taken assembling 6.5 Creedmoor handloads using Hornady Custom Grade dies. Promising powders were picked from various reloading manuals and bullets seated to conform to stated cartridge lengths. Bullets not listed with Creedmoor reloading data were kept on the short side of the Creedmoor's maximum cartridge length of 2.825 inches.

The weather was sunny and the wind dead calm the next time I shot the rifle. In fact, the dust kicked up by bullet impact hung in the air, and after every six shots or so, I had to wait a minute for it to drift away to clearly see the targets.

All the handloaded bullets were paired with three powders. Rifles are often finicky and shoot more accurately with one bullet than another, but the Premier shot at least one of the three loads for each bullet under an inch. All loads with the Sierra and Swift bullets shot less than an inch. The Sierra bullets shot especially well with Hodgdon Varget and IMR-4166. All cartridges were fired one after the other, with the only recess to record chronograph numbers and allow the dust to settle.

Right after firing the last handload, I shot the Hornady Match

cartridges again. Three of the 120-grain A-MAX bullets punched a .49-inch group. This is the only rifle in memory that has continued to shoot tight groups, with no sign of bullet holes walking around the target paper, from such a fiery hot barrel. Certainly the rifle's Bergara barrel was responsible for that dependability. The stiff Premier action and great Timney trigger also contributed. The Premier rifle's beautiful walnut stock lent a hand by doing all the shooting in style.

The BPR-16 Classic with a walnut stock or Stalker with a fiberglass stock sell for \$2,200. Visit online at: www.bergarausa.com; or call toll-free: 1-800-320-8767. **R**

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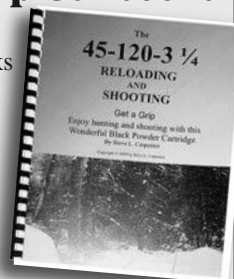
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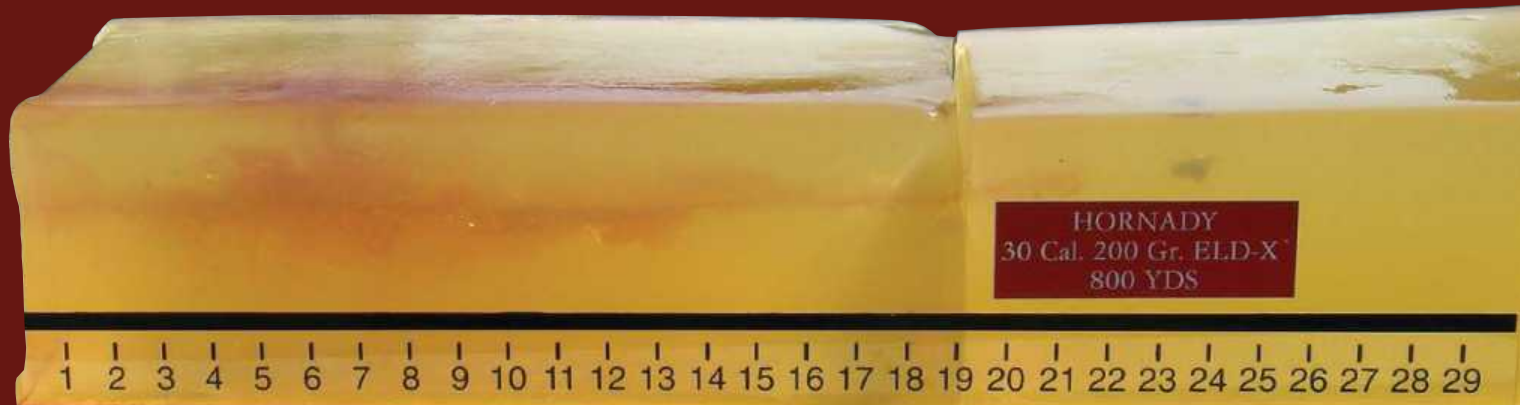
Hornady Manufacturing was founded in 1949 when Joyce Hornady changed careers from a sporting goods store owner to making bullets for hunters. By 1958 Hornady had outgrown a modest downtown factory and constructed a spacious new facility in Grand Island, Nebraska. In 1971 Hornady acquired the Pacific Tool Company and began offering a full-line of presses, dies, handloading tools, etc.

Growth has remained steady, and for the last 15 years or so, the growth pattern has been especially impressive. Today Hornady employs between 700 and 800 people.

On a recent visit to the Hornady plant (including the handloading tool and die warehouse), I was especially impressed with the large number of products that are manufactured, particularly what the company produces from raw materials – an extensive variety of high-quality brass, bullets, ammunition, dies, presses, etc. – and I am not aware of any other company that offers so many similar products manufactured at one location. There is also a culture of shooting and hunting throughout the plants. The offices are decorated with outstanding displays of hunting trips and trophy animals that have been taken around the world, along with company historical photos, props, etc. Throughout the plant, there are targets posted, signed and dated that were shot by employees. It would appear that it is this shared enthusiasm by employees that drives the company, but it also became clear that Steve Hornady is a friend to, and highly respected by, his employees.

This brings us to the development of the ELD-X bullet, designed as a long-range hunting and match bullet, all-in-one, from the start. Work commenced in 2012 and began by testing competitors' bullets, as well as Hornady's own, to determine how they could improve upon them. Hornady invested in Doppler radar to accurately check the bullet's entire flight. Historically a bullet's flight, or ballistics, have been

The Hornady .30-caliber, 200-grain ELD-X bullet penetrated approximately 24 inches in ballistic gelatin at 800 yards when fired from a .300 Winchester Magnum. Above, expansion was classic mushroom.



determined through various testing methods but are often only checked at select distances, then calculated and estimated with assumptions at other distances. However, by employing sophisticated Doppler radar, precise measurements of a bullet's velocity, time, distance and drag during flight are recorded every one to two feet, which became extremely revealing.

Immediately apparent was that many bullets' claimed ballistic coefficients (BCs) were inaccurate, especially at distances beyond 300 yards, often measuring 6 to 15 percent below expectations. Even more puzzling was the changing BC during flight or, more specifically, degrading as the bullet traveled downrange. The decreasing BC was not always consistent and tied with velocity and drag coefficient. In some instances it was recorded to drop .080 BC, or around 13 percent, when compared to its original form.

Testing continued with Doppler radar to identify proper aerodynamic design. By 2014, Senior



Above, the .30-caliber, 212-grain bullets are designed for extreme long-range match and hunting applications. Right, Brian tried the ELD-X in a variety of long-range calibers, including .300 Remington Ultra Mag.

in a rifle's magazine. It is also an important mechanism to initiate and obtain reliable expansion at longer distances and associated lower velocities. Like every other plastic-tipped bullet used in the industry (with the exception of the



Testing Hornady's Latest Offering

Ballistics Scientist Dave Emary and assisting engineers thought they had the new ELD-X bullet designed to perfection, a "done deal" ready for introduction to the shooting public, but final Doppler testing revealed a flaw that put the brakes on that particular design just days before its scheduled announcement. Testing had to be started over again. One of the most difficult hurdles was discovering why and what would change the bullets' BCs and show abnormal drag coefficients (Cd) during flight.

The ELD-X bullet would necessarily feature a plastic tip for multiple purposes, but primarily it would serve to precisely control tip shape, uniformity and prevent battery when subjected to recoil

rubber-tipped FTX and MonoFlex), Hornady initially used a polymer tip. It was soon discovered, however, that the tip was the culprit for the changing BC.

Dedicated long-range bullets are necessarily long and feature high BCs and low drag, which are different. When pushed to high velocities from typical long-range cartridges, time of flight combined with sustained high velocities were causing the tips to heat beyond temperatures they could withstand, causing them to melt during flight – known as aerodynamic heating. Incidentally, polymer melting temperature is between 320 to 345 degrees Fahrenheit. When pushed to velocities of around 3,000 fps, tip temperatures can reach 800-plus degrees.

Polymer tips can withstand this temperature but only for a very brief moment during flight. Heat transfer time varies depending on bullet, velocity, atmospheric conditions, temperatures, etc. When polymer tips are installed in high-tech, low-drag bullets then pushed to high velocities, speeds will be sustained for longer periods, compared to more conventional bullet designs, due to the sophisticated, modern aerodynamic shape. Subsequently, heat is applied to the polymer tips long enough to cause them to melt. This change in BC and drag coefficient during flight also changes from bullet to bullet, all of which affects accuracy and point of impact.

(Incidentally, the melting temperature of lead is around 621.5



Left, Doppler radar was used in the development of the ELD-X bullet. Above, computers were used to track and record the flight performance and impact velocities of a variety of ELD-X bullets.

degrees Fahrenheit; however, lead tip bullets showed no melting during testing. Regardless, lead does not offer all the same advantages of a plastic-tip bullet so is not really a viable material for this application.)

Before proceeding, it is important to emphasize that the above discovery does not make polymer-tipped bullets obsolete or even problematic. In most applications, varmint and big game hunting bullets fitted with polymer tips do not have high enough BCs to subject the tips to aerodynamic heat long enough to cause melting.

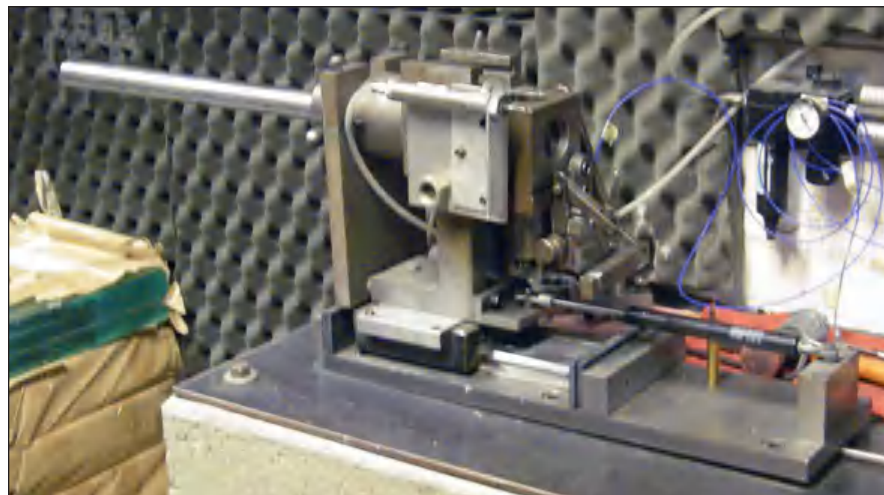
After extensive testing, Hornady finally found a synthetic material suitable for production application and capable of withstanding

the approximate 800-plus degree temperatures associated with aerodynamic heating. Hornady is referring to this material as “Heat Shield” (patent pending). It offers all the same ballistic advantages and precision of polymer while serving as the crucial mechanism for reliable expansion at long range, where velocities are reduced. To achieve the exact desired performance at all ranges, the bullet was once again redesigned. This material is actually harder than polymer and will likewise resist deformation from recoil in the magazine, etc. Hornady engineers report they achieved .20 to .30 MOA improvement in

accuracy over all current conventional tipped bullets at long range.

A few other specifics of the ELD-X design include a larger tip size to allow greater heat capacity while retaining high BC figures. The tip’s shank diameter is large and engineered to facilitate low-velocity expansion. The bullet features AMP jackets that exhibit virtually zero tolerance for concentricity and near zero wall thickness variations. The jacket shank is unusually thick while the lead core and jacket feature Hornady’s InterLock design to control expansion, especially at higher velocities. They also boast of the

This special test barrel was built to duplicate downrange velocities and bullet spin rates, which accurately tests bullet impact function.



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Above, Dave Emery was the primary designer of the Hornady ELD-X bullet. Right, ballistic charts are important to dial scopes to specific ranges and allow for wind drift.

highest BCs of any bullet of the same weight and caliber.

While spending a couple of days at the Hornady plant and covering features and design details of the ELD-X, engineers demonstrated its terminal performance (as well as with a variety of other bullets) in ballistic gelatin. Testing was interesting and revealed why the tip is so crucial to achieve desired performance, especially at

Distance (Yds)	Velocity (FPS)	Drop (In)	Wind Drift (In)
50	2900	0.1	0.1
100	2800	0.4	0.4
150	2700	0.9	0.9
200	2600	1.6	1.6
250	2500	2.5	2.5
300	2400	3.6	3.6
350	2300	4.9	4.9
400	2200	6.4	6.4
450	2100	8.1	8.1
500	2000	10.0	10.0
550	1900	12.1	12.1
600	1800	14.4	14.4
650	1700	16.9	16.9
700	1600	19.6	19.6
750	1500	22.5	22.5
800	1400	25.6	25.6
850	1300	28.9	28.9
900	1200	32.4	32.4
950	1100	36.1	36.1
1000	1000	40.0	40.0

longer ranges. Further illustrations demonstrated why all current match hollowpoint designs offer inconsistent terminal performance, with tumbling bullets, curving wound channels and un-

reliable expansion at longer distances, all of which paralleled my testing and conclusions.

The .30-caliber, 200-grain ELD-X was fired from specially engineered test barrels that simulate the changing bullet spin rate at various distances, as well as special loads to duplicate specific velocities at a variety of ranges. At 150 yards, "wound channels" were impressive, as penetration was straight as an arrow and reached 21 inches while offering devastating tissue damage. Recovered bullets weighed around 125 grains. Expansion was in full swing within a couple of inches of entry. At extended distances of 800 yards, the wound channel appeared similar, with recovered bullets showing classic mushrooming and weighing around 180 grains. Penetration was increased slightly to 24 inches, which is expected when impacting at lower velocities. Expansion is reliable at speeds as low as 1,600 fps.

Lab testing is interesting, but there is nothing better than actual field testing on game. To date, more than 70 head of big game have been taken with the ELD-X bullet, including North American and African plains game. Engineers have been thrilled with the terminal performance, even at ranges exceeding 800 yards. The latest animal taken was a large Alaskan bull moose (64 inches) shot at 91 yards using the 200-grain ELD-X at 2,900 fps fired from a .300 Winchester Magnum. The bullet penetrated to the off-side and was recovered just under the skin. It had lost considerable weight but offered enough penetration to destroy the vitals and reach the offside, with the moose reportedly expiring quickly.

A second day with Hornady was spent at the range, where the ELD-X and a variety of other bullets were tested at long range using Doppler radar. This was revealing as the radar declared not only actual BC and drag coefficient but also showed the degrading BC as polymer tips melted. However, the ELD-X exhibited consistent

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Hornady EDL-X Ballistic Specifications

caliber (grains)	G1 BC	G7 BC
143 6.5mm	.620*	.311*
162 7mm	.613	.308
175 7mm	.660	.330
178 .308	.535*	.271*
200 .308	.626	.315
212 .308	.673	.336
220 .308	.650	.325

* estimate

Notes: The 175-grain 7mm and 212-grain .308 bullets feature long ogives and offer exceptionally low drag. They will not work in standard length actions but are intended for long actions or single shots.

Be Alert – Publisher cannot accept responsibility for errors in published load data.

BC and drag coefficients from the muzzle to the target, all of which were carefully recorded on a computer.

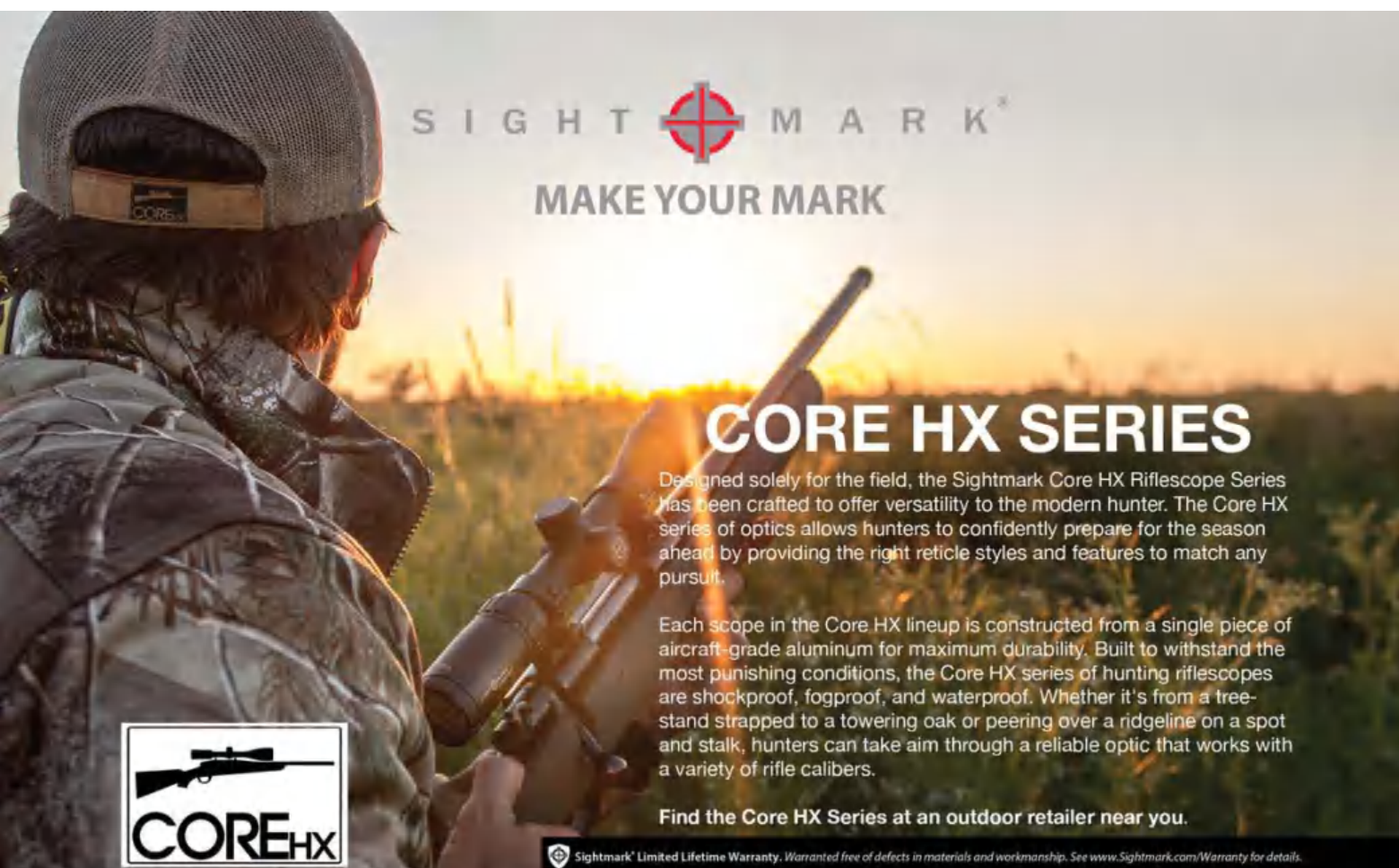
After this demonstration, I had the chance to shoot ELD-X bullets in custom, match-grade and hunting rifles chambered in 7mm Remington Magnum, .300 Winchester Magnum and .300 Rem-

ington Ultra Mag. The cross winds were gusty with speeds of 18 to 24 mph, and the primary focused targets were at 500 to beyond 1,000 yards. With a good spotter, targets were hit repeatedly with different rifles and calibers. It was clear that the ELD-X was performing as designed.

A few shots were fired through a custom Remington Model 700 Sendero chambered in .300 Winchester Magnum fitted with a Bartlein barrel, match chamber, tight throat and .100 inch of free-bore. It was topped with a Leupold VX-6 3-18x 50mm scope with custom shop turrets. Using loads containing the 212-grain ELD-X bullet, a few shots were taken at the 1,000-yard target, just to get a feel for this rifle, its trigger pull and load. The barrel was allowed to cool and the scope adjusted for the 1,200-yard target. Crosswinds gusted 8 to 14 mph. With Dave Emary calling the wind and spotting, I fired four shots, one of which was “called” (to hit to

the right) long before the bullet reached the target, but the other three shots gave that gratifying ring as they hit home on the small steel target and clustered into an impressive .6 MOA group. Not bad for a borrowed rifle on a windy day. There is little doubt that, in spite of the wind, this rifle and load could have performed much better.

Interest in long-range, super-accurate rifles, cartridges and bullets has been escalating in recent years, and the ELD-X introduction is timely. It is clearly the most versatile bullet of its type, as it offers match grade accuracy, defies aerodynamic tip heating and melting, offers the highest BC of any bullet of the same weight and is low drag. It is also a refined hunting bullet that offers exact expansion and penetration at short and extremely long distances. It will be available as a component for hand-loaders, while Precision Hunter factory loads will be available in popular calibers. 



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Mike Venturino

Photos by Yvonne Venturino

A sad fact in every shooter's life is that as we age our eyesight diminishes. Open rifle sights that were sharp and clear become fuzzy. Shooting skill with peep sights can continue longer because the eye automatically centers the front sight in the rear aperture, and only it must remain in focus. Eventually, it too will begin to fuzz-out.

New/Old BPCR Scopes

That is when optics become a shooter's salvation. They can be adjusted so both the target and reticle are perfectly defined. Scope sights extend a competitor's or hunter's rifle shooting skill indefinitely. In fact, the game of NRA Black Powder Cartridge Rifle (BPCR) would likely be dead now without scopes. As devised, the rifles allowed were hammer-equipped single shots designed prior to 1896 firing cartridges also introduced before that year. For sights they could be peep or open types, but they could not be click-adjustable. Originally there was no provision for optical sights.

As many of the early BPCR silhouette competitors aged, they began to drop from competition, so in the late 1990s, the NRA began to allow scopes with external adjustments sans clicks. Scope tubes could only be $\frac{3}{4}$ inch in diameter with objective bells limited to $\frac{7}{8}$ inch diameter. Scope magnification is not limited. Also, allowable rifle weight with scopes increased from



12 pounds, 2 ounces to 15 pounds, including the scope. Early matches with scoped rifles consisted of about a

dozen shooters. Nowadays scope-equipped participants usually equal the number of iron-sight shooters.

Scopes have also appeared on BPCRs in the hunting fields. Not only do they enable an eyesight-challenged shooter to continue hunting with such rifles, but they also help to extend the effective range of black-powder cartridges.

Some years back I was hunting free-ranging bison on the Sandhills Ranch Properties in north-central Nebraska. The country there is almost totally treeless and with little brush. In other words, stalking is difficult. I was after a bison cow for meat, and the guide said there was a specific one they wanted rid



This Shiloh Sharps Model 1874 (top) features a Montana Vintage Arms 23-inch 6x scope. Below it, this Peabody rifle from Providence Tool Company is fitted with a 28-inch Montana Vintage Arms 6x scope.

Options for Improving Sight Picture

of because of its aggressive tendencies. When we found it, our closest approach still left us 260 yards shy of the critter, a distance at which I would not try a shot with an iron-sighted BPCR. However, my Shiloh Sharps Model 1874 .45-70 was fitted with an RHO 4x long-tube telescope sight. I knew my 200-yard setting and guessed about the extra 60 yards. As often happens with bison, several shots in the heart/lung area were needed to ground the cow for good. I wouldn't have even shot with iron sights.

One might be excused for thinking that adding optics atop a BPCR rifle would make competition a cinch. In fact, I did think that. Also in fact, scopes do not make the game easier. They do allow better visibility, but they do not ensure bullet placement. Absolute steadiness, a proper trigger release and follow-through are still required. What scopes do ensure is that the rifle's movement, even when solidly rested

on crossed sticks, is evident. Rest that same rifle with iron sights on the same sticks stuck solidly into the ground, take careful aim and everything seems perfect. Put a scope on, and suddenly even the shooter's heartbeat is noticeable.

Early on in the inclusion of scopes on BPCRs, there was only one national championship. Scoped shooters were merely in a different class or division. Soon afterward the NRA created a separate match entirely. NRA silhouette score books have separate pages for each type of BPCR. The course of fire is exactly the same except for sights. So at monthly local matches, shooters using iron and scope sights can fire side by side with the only separation being on the score board.

For about 15 years, the NRA has hosted two national championships: one for iron sights and one for scope sights. They are held each year consecutively



Jen Oliva is shooting her CPA Stevens rifle with a 28-inch Montana Vintage Arms 6x scope.

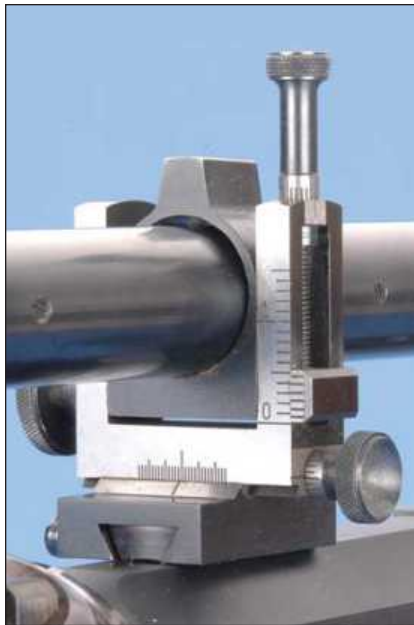
New/Old BPCR Scopes

at the Whittington Center near Raton, New Mexico. Both are 120-shot aggregates with 60 rounds for score on two days. Most state championships also now have at least three days of shooting. Some locales have a scoped day on Friday with either 40 or 60 shots for score, then the next two days are 40 shots each for score with iron sights.

The Arizona state championship consists of three days with 40 scoring shots each. Until 2015 shooters had to choose either/or, as in all three days with iron sights or with scopes. In 2015 shooters could actually sign up for both. I did not. Three days shooting a big-bore single shot a minimum of 120 rounds (Each day would consist of 80 for score and at least 40 sighters.) is more physical punishment than most of us desire, especially us senior citizens.

(I predict that eventually the state matches will change thusly. Instead of one scoped day and two for iron sights, they will become two scoped days with one iron sight day. At the last state championship I attended, 50 percent of the shooters were seniors. Several only shot the scoped day, then went home.

When hunting that bison cow, my rifle had an RHO scope. My understanding is that the scope maker, Randy H. Oates of Washington, is now out of business. For a while I had two of his long-tube scopes on Shiloh Sharps .45-70s used solely for hunting. While not the clearest of scopes, they were perfectly adequate for hunting, but they were lacking for match shooting. This was because their adjustments were not precise enough for



Above, the rear mount of a Montana Vintage Arms scope; with a 23-inch scope, one minute-of-angle movement is three of the small marks. Right, for shooters with poor eyesight, Montana Vintage Arms offers large stem knobs reading in one minute of angle.



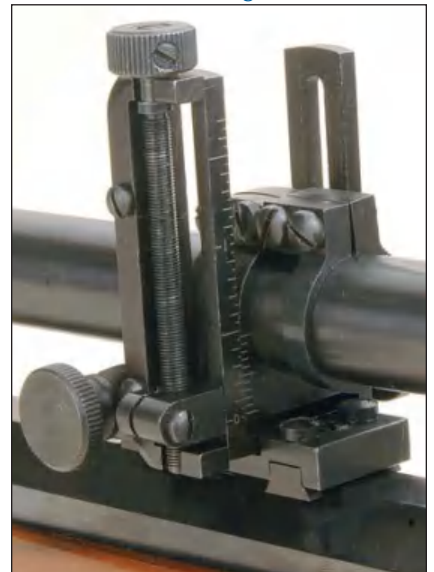
staying on a ram silhouette at 500 meters (547 yards) with its height dimension of only 12 inches from belly to backbone. They also were not quickly adjustable for windage. They could be moved laterally and locked down, but doing so in the midst of a timed event was not feasible.

If a single factor can be credited with scoped target shooting's growth, it is that Montana Vintage Arms began manufacturing top-notch, long-tube telescopes with corresponding and finely adjust-

able mounts. By "top notch" I don't mean just in terms of optical clarity. These scopes are adjustable for parallax and reticle focus with five reticles to choose from. As indicated, a BPCR scope must be minutely adjustable to serve the competitor, because adjustments as small as a minute of angle or less at distances to 500 meters are a necessity.

If logical-minded readers question my attribution of scoped BPCR growth to Montana Vintage Arms, let me give the following ev-

Below, the Hi-Lux/Leatherwood 6x scope only has coarse windage adjustment in its front mount but precise elevation adjustment in the rear mount (right).





Mike shoots a Shiloh Sharps Model 1874 with a 28-inch Montana Vintage Arms 6x scope. (Haze in the air is from forest fires.)



This exercise with an MVA scope was to test its repeatability at 100 yards.

idence. I have the final tabulations for all NRA BPCR Silhouette national championships, so 10 years' worth was reviewed – from 2005 through 2014. During those events, competitors using Montana Vintage Arms scopes outnumbered any other brand of scope by a low

of 7:1 to a high of 23:1. In 6 of those 10 years' worth of tabulations, the NRA listed the equipment used by the top 10 shooters. In five of those years, all top 10 shooters used Montana Vintage Arms scopes, but in 2014 8 shooters used them. The scoped national champions

all used MVA scopes. That small company has been important in helping the NRA's scoped BPCR Silhouette matches keep senior shooters on the firing line.

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New/Old BPCR Scopes

six scopes suitable for BPCRs. The newest one is the B-series re-creations of Winchester's A5 or Lyman's 5A available in 3x, 4x or 5x with scope lengths being 14 to 15 inches, depending on exact power. Field of view is 10 feet at 100 yards.

Montana Vintage Arms first envisioned its B-series scopes more suited for hunting rifles, so original mounts were similar to Winchester's from the early 1900s. Scope adjustments were meant for sighting in and locking down, not for quick adjustments



This Ballard rifle sports a Montana Vintage Arms 5B scope that's only 14 inches long.

in the field. However, BPCR scope competitors quickly saw that B-series scopes would be fine for target shooting *if* finely adjustable mounts were also fitted, and the company quickly accommodated.

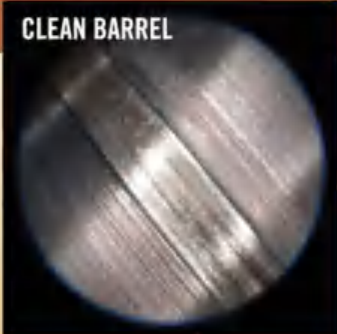
When B-series scope mounts are fitted with a 7.2-inch spacing (on centers), adjustment marks are in minutes of angle. It should also be noted that a special "lifter" block is necessary on the rear

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mount in order for adjustment to 500 meters.

Montana Vintage Arms' other long-tube scopes are listed as Series 2000, 3000, 4000, 5000 and 6000 with lengths of 23, 28, 33½, 35½ and 37½ inches, respectively. All are 6x with a 10-foot field of view at 100 yards. Mount screw spacings (on centers) are 10.34 inches for 23-inch scopes and 17 inches for all the others. With such spacing, the 23-inch scopes give one minute-of-angle adjustment for every three small marks on its knobs. The others give one minute-of-angle adjustment from each large mark to the next. Without being able to offer evidence, I think that more shooters go for the 17-inch screw spacing, because it is easier to see the larger marks than the small ones necessitated by the 10.34-inch mount spacing. MVA has added large adjustment knobs to fit atop the scopes' elevation and windage stems so that minute-of-angle changes can be seen easily.

Of the several types of reticles available on the long-tube scopes, I've used only standard crosshairs, mil-dots and crosshairs with aperture centers and have settled on standard crosshairs for both my 23- and 28-inch scopes. In BPCR Silhouette matches there is a time limit, so instead of spending it re-adjusting windage and/or elevation as conditions change, I prefer to shift point of aim as per my spotter's calls, *as long as I'm not holding completely off the silhouette*. Our procedure is to have a spotting pin of a picked color, and the spotter puts it where he thinks the shooter should aim.

The above emphasis on Montana Vintage Arms should not be construed as denigration of other companies' optics. Hi Lux/Leatherwood has several versions of Wm. Malcolm long-tube scopes manufactured in China, and a relatively new entry to the field is DZ Arms of Oklahoma. I have used samples from both manufacturers. Wm. Malcolm scopes have included a 6x version (30.5 inches long), a 3x (17 inches long) and

a 6x (18 inches long). My BPCR experience has been with the 30.5-inch sample on a Pedersoli Sharps .45-70. It has decent elevation adjustments in a Vernier scale but only coarse windage movement. I consider it more of an entry level BPCR scope. The shorter 3x and 6x Wm. Malcolm Leatherwood scopes are intended more for hunting rifles, because their adjustments are meant to be moved for sighting in but then are locked down; they are not for fast changes.

A more recent entry for scoped BPCR Silhouette comes from DZ Arms, the maker of replica Remington Hepburn single-shot rifles. They are 20 inches long and of 8x power. Even before DZ scopes were ready, the company was selling a significant number of its mounts. With a 7.2-inch mount spacing, the graduations are in half-minute-of-angle increments. Thus far DZ Arms' scopes have standard crosshair reticles. R

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The Balvar 8



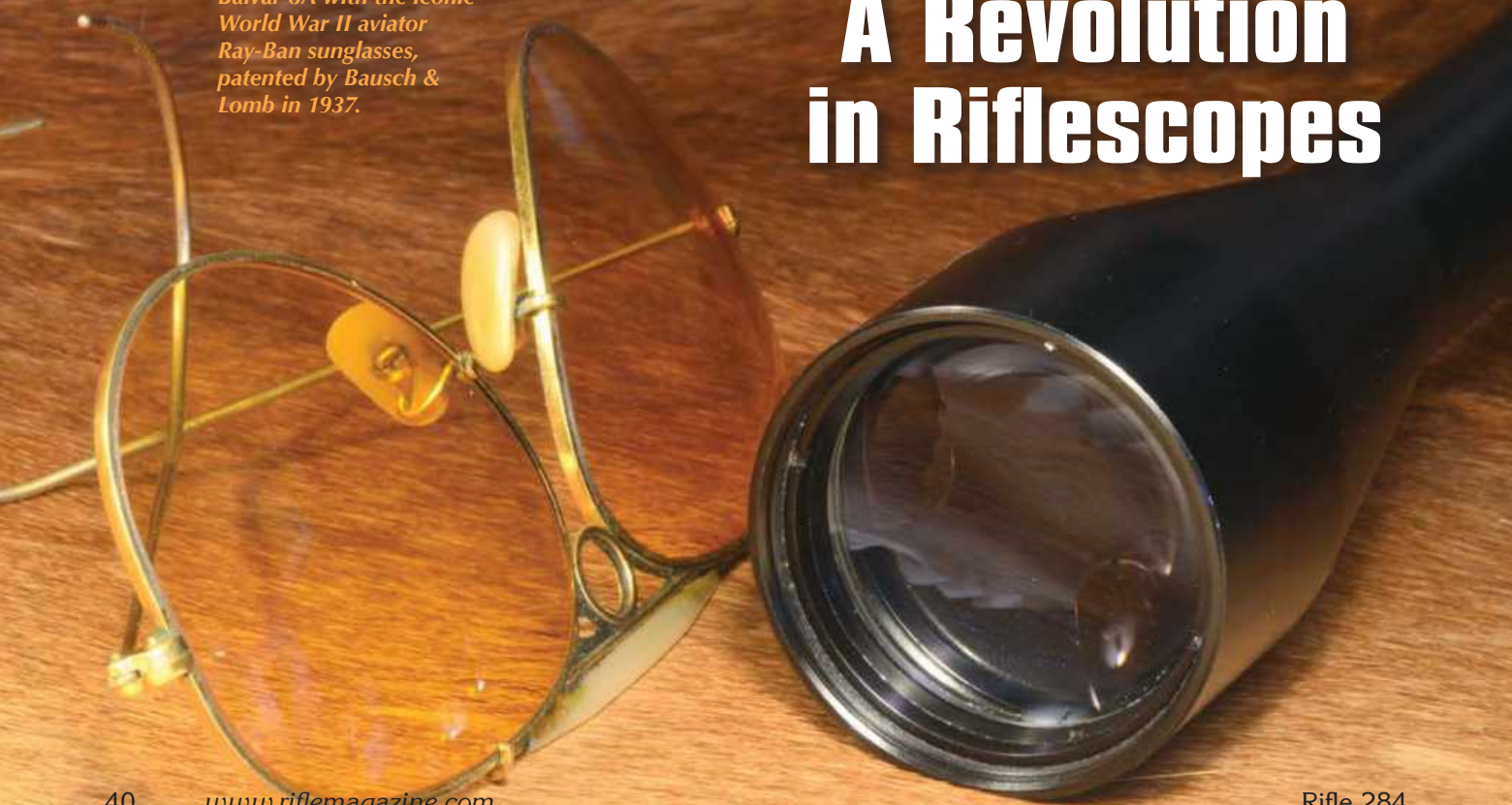
Terry Wieland

The term “revolutionary” is thrown around rather loosely these days. Many products are advertised as such, but you never know what was truly revolutionary until you look back, years later.

The shooting world has had many true revolutionary moments, from Alexander Forsyth’s discovery of percussion to the introduction of the Mauser 98. One of the unsung moments occurred in 1957, when Bausch & Lomb unveiled the Balvar 8 variable-power riflescope. It had the unheard-of magnification range of 2.5-8x with a 40mm objective lens. Introduction of the Balvar 8 marked the beginning of the end of the dominance of fixed-power scopes and a transition to variables that continues with unstoppable momentum.

Balvar 8A with the iconic World War II aviator Ray-Ban sunglasses, patented by Bausch & Lomb in 1937.

A Revolution in Riflescopes



The Balvar 8, however, was not the first variable-power scope. Even in the 1950s, the concept had been around for a while, with different manufacturers trying different approaches. Weaver, for example, tried a “two power” variable KV that could be switched between 2¾x and 5x but with no interim settings. It never caught on. Some European optics companies also tried lower-power variables, but the disadvantages, such as increased bulk and complexity, did not outweigh the advantages.

One major disadvantage that showed up early was the increased size of the reticle when the scope was adjusted to higher power. This occurs when the reticle is in the first focal plane (forward of the magnification adjustment). Today, that problem is solved by putting the reticle in the second focal plane, which allows it to remain a constant size even while the magnification is varied up and down.

Arguments can be made both ways as to which is better, and in the end it boils down to personal preference. In 1957, however, Bausch & Lomb solved the problem with a reticle design that is almost genius. Known as the Tapered Cross-Hair, it consists of lines that are thick at the outer edges and taper down to almost nothing at the center – extremely narrow triangles with their apexes meeting at the aimpoint. In fact, they are not “hairs” at all but metallic deposits on a piece of glass. Theoretically, that point is geometric nothingness that stays exactly the same size as the magnification changes. So do the triangles, although what the eye sees as the same size is, in fact, a smaller portion of the same triangle but still narrowing down into near-zero at the center.

At a stroke, B&L had met the requirements of both sides of the argument: heavier lines for low light visibility but no obstruction of the target in the center, which

stayed the same size regardless of the power setting. In a way, the reticle was as big a breakthrough as the scope itself.

Reticle size was not the only problem facing scope makers in

the 1950s. Another was the continuing challenge of making scopes durable enough to take the beating of recoil and rough handling without changing zero or allowing moisture into the tube. It was



From left, the original Balvar 8 (1957), the 8A (1964) and the final Balvar 8B with internal adjustments (1968).

The Balvar 8



The Tapered Cross-Hair reticle of the Balvar 8 solved the problem of reticles increasing and decreasing in size as scope power was changed.

tough enough to do this with internal reticle adjustments without adding the complexity of variable-power mechanisms as well. It took a company with Bausch & Lomb's technical expertise to overcome every challenge and produce a scope as revolutionary as the Balvar 8.

In the 1950s, Bausch & Lomb was the American leader in optical instruments and research. To-

Below, the B&L mount system had built-in elevation and windage adjustments, and the scopes were quick-detachable. With mounts on different rifles, scopes could be moved from one rifle to another with no need for resighting. Right, B&L mounts were quick-detachable with external adjustment. With its spring-loaded plunger, the scope can be removed simply by pulling back on it and lifting up – the simplest quick-detach system ever developed.

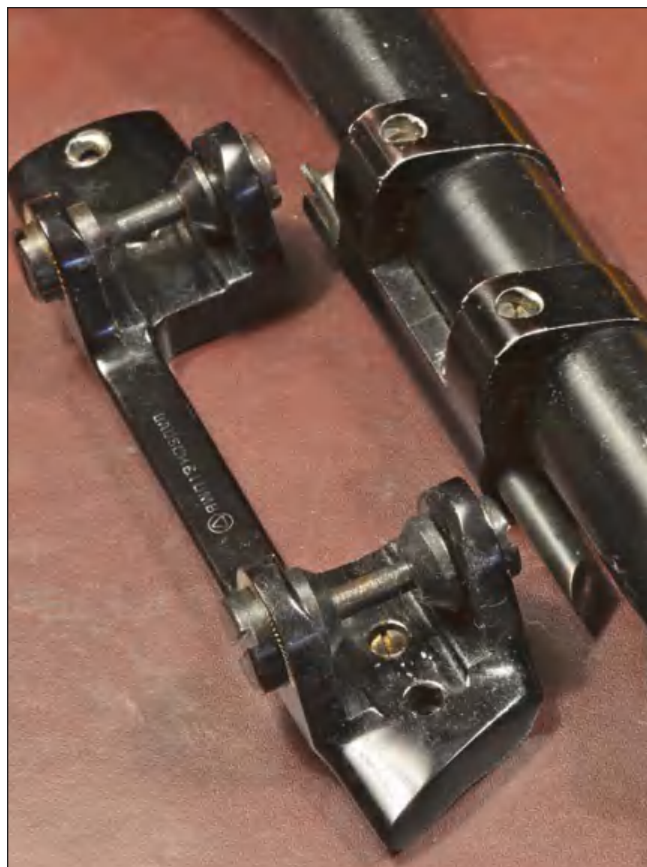


Bausch & Lomb external-adjustment mounts for the Savage 99 (top) and the one-piece mount for the FN Mauser.

day people know it as a purveyor of contact lenses and related paraphernalia (It invented the soft contact lens in 1971.), but in the early part of the twentieth century, it was America's answer to Zeiss in everything from microscopes to

telescopes. B&L binoculars were legendary, and its riflescopes were top of the line.

Founded in 1853, Bausch & Lomb and, later, Eastman Kodak became the twin pillars that made Rochester, New York, the optical capital of America. Its major product was finely ground optical glass, and B&L provided lenses not only for its own products but supplied them to others as well.



When Winchester first made riflescopes before 1914, the lenses were from B&L; later the company supplied lenses for the Lyman line of riflescopes.

It's worth noting a couple of other milestones along the way. In 1937, B&L introduced Ray-Ban aviator sunglasses; these became iconic during World War II and were prized by shooters for 60 years afterward. In 1970, Bausch & Lomb lenses were in the camera that took the first photographs on the moon.

With this background, it's not surprising that B&L entered the postwar riflescope market. After 1945, the shooting sports boomed, and the growing trend toward riflescopes and away from traditional open sights presented a huge opportunity. From the very first, Bausch & Lomb scopes were in an elite class compared to the pioneer Weaver and Lyman scopes. A B&L scope cost up to twice as much as its competitors. Its first scopes were the traditional 2½x and 4x, plus its first variable, a 2½-4x. At such a low variable range, changes in the size of the reticle hardly matter, and placing it in the first focal plane eliminated one major problem, which is that reticles in the second focal plane were found to change point of impact as the magnification was changed.

Another consideration in those days was whether to have internal zeroing adjustments or external – that is, having a scope mount that was adjustable for windage and elevation. The latter was preferred, because it allowed a completely solid construction of the scope tube and lenses with no moving parts to jiggle around and change settings. This made the scope both more durable and more weather resistant. The early B&L scopes had external adjustments, and the company designed its own line of adjustable mounts to accommodate its growing line of scopes.

External-adjustment scopes are almost unknown today, except for some target models, but in the 1950s they were common.

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The Balvar 8

The argument in favor of them, aside from simplicity and durability, was cost. They were less expensive to produce in the first place, but with the adjustments in the bases, it meant a shooter could switch one scope among several different rifles. The Bausch & Lomb adjustable mount was also quick-detachable. The scope could be taken off one rifle, on another, and it would already be sighted in.

Bob Bell was the first American outdoor writer to make a specialty of optical equipment. A veteran of World War II (He served with the U.S. infantry in Europe.), Bell returned home to become a devoted hunter, shooter and writer. In 1962, he took over the optical department of *Gun Digest*, and his name remained on the masthead until 2003 – a truly remarkable stretch. For 40 years, Bell's job was to evaluate every new thing that came along from every manufacturer. Such close connections with the industry over a long period gave him a unique perspective from which to judge what was revolutionary and what was a flash in the pan. In 1983, he published the *Gun Digest Book of Scopes and Mounts*, which gave a history of the riflescope business in America to that point.

"Variables have cornered a big percentage of the market, and the Balvar 8 has to be responsible for much of that," he wrote. "It was a milestone in hunting scopes.

"It's impossible for anyone who wasn't into scope use in mid-'50s to understand the effect its appearance had . . ."

Bell described the B&L salesman's gimmick of opening a gunshop door and tossing a Balvar 8 onto the floor so that it skittered and scraped across and hit the far

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wall. It didn't matter whether the floor was concrete or wood, they would do it to show how durable the scope was. When the customers then picked it up and looked through it, they were amazed.

"Hunters lined up just to look through the darn thing," Bell recalled. "It really was an experience to watch image size come and go, everything staying in focus through it all, with no change in eye relief or apparent reticle size.

"Shooters who have grown up using good variables don't know the fun they missed, not being there when it all started."

The Balvar 8 owed its optical excellence not just to Bausch & Lomb's lens-grinding expertise but also to its use of coatings. It was one of only two companies (the other being Zeiss) that coated their lenses in 1960. The scope's durability was partly due to B&L's knowledge of adhesives for bonding glass and metal, acquired through its work during the war. The Balvar 8 was not cheap. All Bausch & Lomb scopes commanded a premium price, but in 1957, the Balvar 8 cost \$95 – more than any other domestic scope. It ruled the roost.

In the *Complete Book of Rifles and Shotguns* (1961), Jack O'Connor, who for years carried a Bausch & Lomb 9x35 binocular, described the Balvar 8 as "remarkable." The rifle world was divided into two types of shooters: those who had a Balvar 8 and those who desperately wanted one.

Having established itself in 1957, the scope went through some changes over the next decade. In 1964, it became the Balvar 8A, slightly longer, slightly lighter and with a more modern appearance. The final change came in 1968 when Bausch & Lomb bowed to demand with a line of scopes with

(Continued on page 59)

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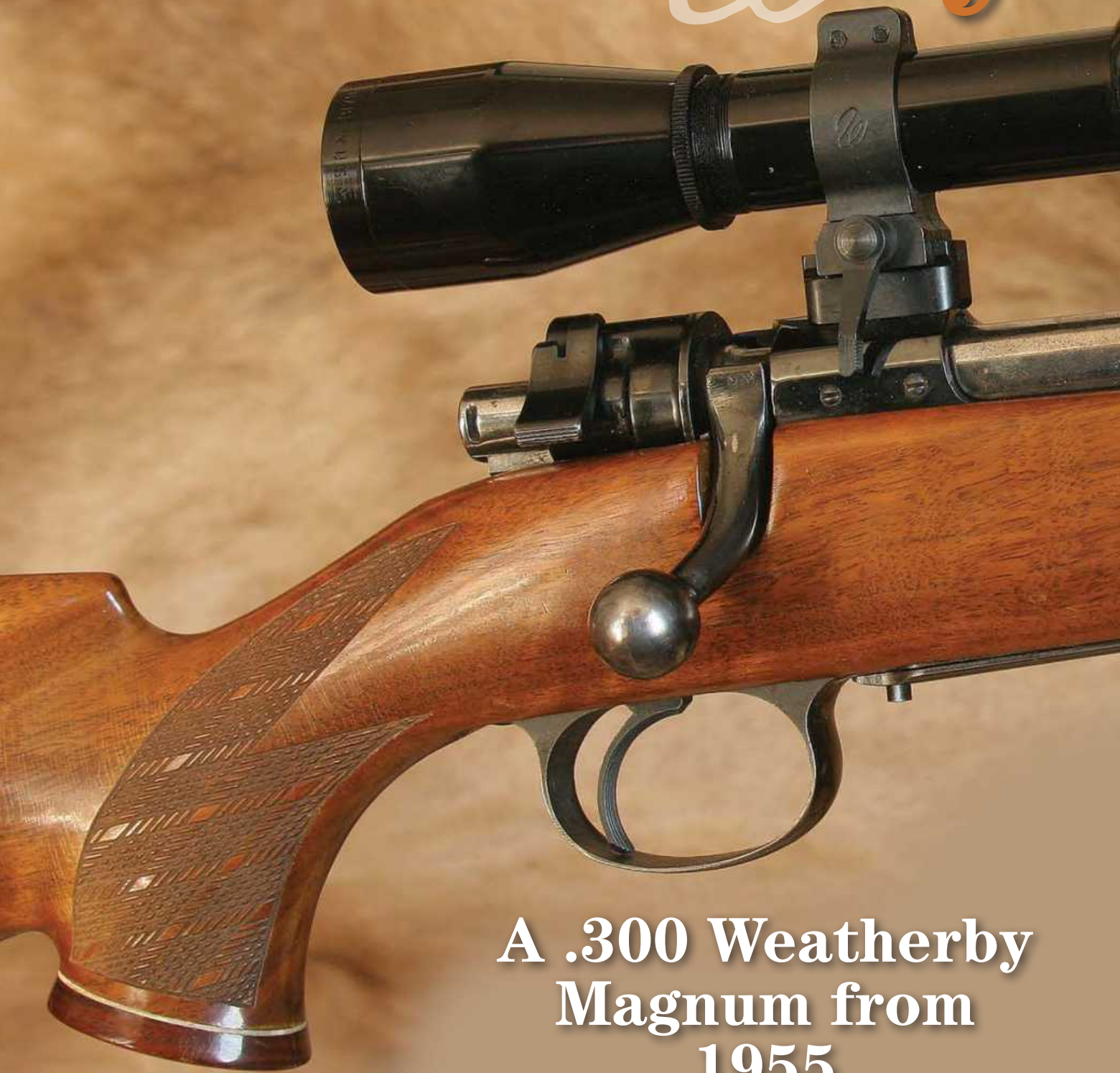
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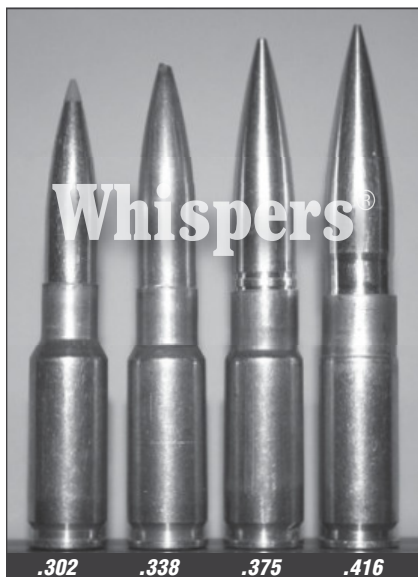
The path to becoming a firearms manufacturer can be as winding as Dorothy's Yellow Brick Road. Some start out as gunsmiths, such as Eliphalet Remington, while others have zero gunsmithing experience but plenty of financial and promotional acumen. Oliver Winchester is a prime example. Others combine various skills, including Roy Weatherby, a fine example of the American dream of hard work beating long odds.

John's Weatherby deluxe is the basic grade with open sights. Weatherby offers Talley detachable rings with the company's "W" engraved.

First Factory Weatherby

His story is told very well in the 1992 biography *Weatherby: The Man. The Gun. The Legend.* by Grits and Tom Gresham, published four years after Weatherby passed away at 78. The son of a poor Kansas tenant farmer, Weatherby's family ended up moving around the country as his father looked for work. Roy also held various jobs, starting with trapping as a kid, but eventually he became a salesman.

At 23, during the bottom of the Great Depression, he ended up working back in Kansas, while taking night classes at the University of Wichita. After marrying a fellow student named Camilla Jackson, they headed west, eventually ending up in the Los Angeles area, where Roy worked as a salesman for the Automobile Club of Southern California, making a



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Even the basic Weatherby Deluxe included a diamond inlay on the pistol grip cap, but the floorplate on John's rifle is slide-off rather than hinged.

better than average living when many people couldn't even make a living.

Weatherby always liked to hunt, and in 1942 he took his first deer in Utah (There weren't many, if any, in Kansas during the Depression.), becoming convinced high velocity was the answer to killing power. The economy had improved around the start of World War II, and he bought a small lathe and drill press and started making his own rifles and wildcat cartridges in his garage, subcontracting the work he couldn't do.

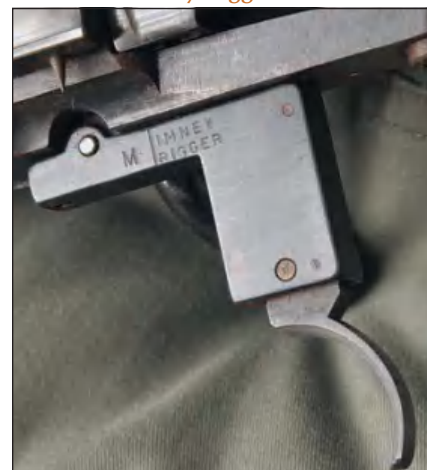
Many people had developed "magnums" similar in basic conception to Weatherby's, but he started with one major advantage: The years before the war resulted in huge leaps in firearms technology due to military needs. Among these was DuPont IMR-4350, introduced in 1940. IMR-4350 remains popular today, but at the time it was by far the slowest burning of DuPont's "Improved Military Rifle" powders, providing a huge velocity leap. The often highly publicized increases from new powders since then, such as Reloder 17 a few years ago, are mere baby steps compared to the extra zip provided by IMR-4350. Even today IMR-4350 hangs right

in there with RL-17 in most cartridges.

Weatherby started with cases already known for high velocity, such as the .220 Swift and .300 H&H. He "improved" the Swift by



Above, there's an extra recoil lug silver-soldered to the barrel shank to prevent the stock from splitting. Below, the rifle has a Timney trigger pulling a very crisp 2.75 pounds, but other FN Weatherbys had Jaeger, Mashburn, FN and even reworked military triggers.





Above, the combination of Hornady brass and IMR-7977 worked very well. In fact, the powder can lists the .300 Weatherby. Right, five bullets shot well in the light-barreled rifle: (1) Cutting Edge 150-grain Raptor, (2) Hornady 165 InterLock Spire Point, (3) Swift 165 Scirocco II, (4) Sierra 180 ProHunter and (5) Nosler 200-grain Partition.



blowing the case out in a larger chamber, calling the result the .220 Rocket, and shortened and blew out the long H&H belted case to fit .30-06-length magazines. His first belted magnum appeared in 1943, using .270-caliber bullets

and gaining considerable velocity over the .270 Winchester, then only 18 years old. In 1944 he necked the .270 Weatherby Magnum case to .25 and 7mm and blew out the full-length .300 H&H to make the .300 Weatherby. In 1945 he did the

same with the .375 H&H, resulting in a lineup of Weatherby rounds suitable for all hunting on earth.

His magnums featured a unique double-radius shoulder, which Weatherby claimed helped increase velocities, though some

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First Factory Weatherby

suspect the claim was pure promotion. Weatherby was indeed a professional salesman and started writing letters to hunting magazines about his high-velocity theories – and eventually a few articles for some of the same magazines. By 1945 he was making enough money on his rifles and cartridges to quit his job and, with a loan from a friend, open a combination sporting goods store/gunsmith shop in South Gate, a Los Angeles suburb.

New hunting firearms remained scarce for several years after the war, and Los Angeles turned out to be a hotbed of hunting rifle development, partly because game was plentiful in California and nearby western states, especially after many hunters had been overseas for a few years. Many movie actors were avid hunters, and some heard of Weatherby's fast and fancy new rifles. Gary Cooper drove to Weatherby's store one day to take a look and became one of Weatherby's shooting buddies, even sighting in rifles made for other clients and testing ammunition with the help of Roy's home-made chronograph. Soon Weatherby had other wealthy clients, including Roy Rogers and John Wayne.

His business kept growing, al-

lowing him to hunt in places from British Columbia to Africa, but Weatherby didn't usually have that much cash on hand, continually reinvesting whatever he could make and borrow back into his company.

During the first few years, each rifle was individually made, often on an action the customer provided, but within a few years, demand grew so fast Weatherby decided to build a standardized rifle as well. Many shooters assume this was the Weatherby Mark V, but before the Mark V, he produced what could be termed the transitional Weatherby, starting in 1949. He made a deal with Fabrique Nationale in Belgium to regularly purchase its commercial 98 Mauser actions stamped with "Weatherby, South Gate" and his own serial numbers, with modified magazines to handle .300 and .375 Weatherby cartridges. He also purchased a Pratt & Whitney cutting machine for making barrels and an 18-spindle stock duplica-

Despite the rifle's relatively light weight, the Weatherby stock design was comfortable to shoot off the bench.



.300 Weatherby Magnum Handloads

bullet (grains)	powder	charge (grains)	overall loaded length (inches)	velocity (fps)	group (inches)
150 Cutting Edge Raptor	IMR-7977	90.0	3.610	3,305	.87
165 Hornady Spire Point		88.0	3.595	3,131	1.25
165 Swift Scirocco II		84.0	3.554	3,209	1.02
180 Sierra Pro-Hunter		87.0	3.600	3,089	.95
200 Nosler Partition		86.0	3.603	3,001	1.19

Notes: All handloads used Hornady cases and CCI 250 primers. Group size is the average of three shots fired at 100 yards.

Be Alert – Publisher cannot accept responsibility for errors in published load data.



The Cutting Edge Raptor turned in the smallest groups of the bullets tried.

tor, hiring skilled workers to build what he called Weatherby Deluxe rifles in various grades.

The gunsmithing shop filled the back of the now vastly expanded store, itself an attraction due to the big game mounts displayed behind an expanse of picture windows. The shop included a 100-yard indoor shooting range, so new rifles could be tested and sighted in right there. To help pay for the machines, Weatherby turned stocks and provided barrels to other companies, and at one point 100 new FN actions were being delivered every other month.

The shop wasn't a rifle factory like Remington's. Instead, it made what some today call semiproduction rifles like those from New Ultra Light Arms, built around a basic theme with options. Weatherby called the basic rifle the Deluxe and higher grades Customs. This period lasted several years, and the new

Weatherby rifle received a very favorable review in the 1954 *Gun Digest* from Gen. Julian Hatcher (author of 1947's still-in-print *Hatcher's Notebook*), starting with the sentence: "Some of the finest big game rifles to be had anywhere are made by Weatherby's, Inc., of South Gate, Calif."

Oddly, the Weatherby rifle wasn't included in the 1954's catalog section and didn't appear there until the 1957 *Gun Digest*, where the basic Deluxe in Weatherby chamberings listed for \$250. This may sound like a screaming deal to shooters who don't understand inflation (There are some.), but the Standard Grade of what became known as the pre-'64 Model 70 Winchester then listed for \$124.95. The U.S. government's Internet inflation calculator puts the 2015 equivalent of \$250 in 1957 at a little over \$2,000.

Not long after the Weatherby Deluxe appeared, Roy started designing what became the Mark V action, partly because the FN action couldn't handle the .378 and .460 Weatherby Magnums he'd developed in the early 1950s by necking down the .416 Rigby case and adding a belt. Instead, .378s and .460s were made on various other actions until Weatherby's own Mark V appeared.

The first Mark Vs were made in South Gate, but Weatherby eventually decided producing his own rifles was a losing proposition, and after the German firm J.P. Sauer started producing Mark V rifles in 1959, the FN-based rifles were phased out. I've owned and hunted with several Mark Vs over the past 20 years and they're very accurate. I've also long been an admirer of FN Mauser actions, owning several custom rifles based on FNs and eventually desired a 1950's Weatherby Deluxe.

Since I try to hunt with all my rifles, this probably wouldn't be one of the higher-grade Customs, since in decent shape they've become collector's items. Instead, the search was for a basic Deluxe, in good but not perfect condition, so I could afford it and not worry

about tiny dings when hunting. In 2014 a .300 Weatherby Magnum came home via a trade, a slightly higher-grade rifle (It has iron sights.) with a light 24-inch barrel and a 1955 serial number.

The original Pachmayr ventilated recoil pad still has plenty of spring, not always the case with older rifles, and my Hawkeye bore-scope revealed a typical cut-rifled bore, not lapped like so many custom cut barrels are today, instead resembling a pre-'64 Winchester's bore. The very edge of the throat, just in front of the chamber, showed a tiny amount of erosion, so the rifle had been shot some but not much. The barrel is stamped "Chrome Lined," and there's a second recoil lug silver-soldered to its shank, fitting into a slot in the barrel channel to prevent the stock from splitting. (The wood, by the way, has fiddleback all the way from the recoil pad to the angled rosewood tip.)

Somewhat miraculously, the factory inletting hadn't been "improved" by epoxy-bedding, and I decided to shoot the rifle as-is. This decision was based on something written by Jim Carmichel years ago, where he suggested shooting all rifles before doing any tinkering, because they might be accurate without modifications. In many instances this has saved considerable time and effort.

These days Weatherby offers detachable Talley rings with its logo ("W") engraved, and a pair were used to mount a 6x36 Leupold scope. On an accurate balance scale, the scoped rifle weighs only 2 ounces over 8 pounds, a good weight for actually hunting with a .300 magnum. (As some wise guy once noted, "Gravity is constant, and recoil only momentary.")

I'd handloaded for a couple of previous .300 Weatherbys, eventually settling on Ramshot Magnum and 200-grain Nosler Partitions. But Magnum had become unobtainable, and I wanted to save my dwindling stock for known loads in other rifles. Plus, some new powders, bullets and even brass had appeared. The recent IMR-

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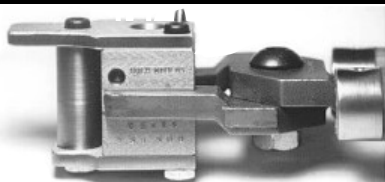
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7977 in particular looked like a great choice in the .300 Weatherby Magnum, not only providing high velocities but also including a decoppering agent, and it's supposedly very temperature-resistant. (I'll know more about that after testing in cold weather. The listed loads were shot at 65 to 70 degrees Fahrenheit.) I decided to use new Hornady .300 Weatherby brass, which proved to be very uniform, with none of the 50 cases showing more than .0015 inch variation in neck thickness.

At the range it immediately became apparent the old Weatherby was pretty accurate but also pretty picky about which bullets it liked. This isn't uncommon, since all but the .240 and .460 Weatherby Magnums have chambers with considerable "freebore," essentially a very long throat, which flattens out the pressure curve but can also result in mediocre accuracy with some bullets, especially boat-tails.

The .300 Deluxe didn't group most lead-cored, boat-tail bullets very well, though this old rifle grouped some worse than recent Weatherbys. The Berger 190-grain Hunting VLDs spread over 4 inches, something I've seen before with 168-grain Hunting VLDs in a 7mm Weatherby Magnum, and Sierra 180-grain GameKings didn't even shoot what might be called a group, while the flatbased Sierra 180 Pro-Hunter shot very well.

However, the rifle really liked Cutting Edge 150-grain Raptor bullets, a monolithic copper boat-tail designed to lose its petals, increasing tissue destruction. I've only tested Raptors on a few animals so far, but they have worked very well. The most spectacular result came from a pronghorn doe my wife killed with a 40-grain

Raptor started at 4,300 fps from a .22-250 Remington. The pronghorn stood quartering toward Eileen at around 150 yards, and the little bullet entered just inside the near shoulder. The doe dropped and never moved, and we recovered the shank of the bullet under the skin at the rear of the rib cage on the other side. I've used the 150-grain .30 from a .30-06 on meat deer with great results, with the base always exiting, and I can't imagine why it wouldn't work on elk-sized game when started at 3,300 fps. (The 150s used in the test have now been replaced by a 145-grain Raptor, which I also can't imagine would work any differently than the 150.)

The best groups from any lead-cored boat-tail were with Swift 165-grain Scirocco IIs. The first group was just okay, but secant ogive bullets like the Scirocco are often more particular about seating depth than common tangential ogive bullets. Seating the 165s a little deeper resulted in very acceptable accuracy. (By the way, for those who haven't handloaded any of the freebored Weatherby rounds, bullets normally can't be seated close to the lands. Instead, load them to magazine length, and if they don't shoot as well as hoped, seating a little deeper often helps.)

I didn't expect a .300 Weatherby Magnum with a slim barrel only measuring .55 inch at the muzzle to shoot like a benchrest rifle, especially with the barrel contacting the forend channel all the way to the rosewood tip. But it's certainly accurate enough for big game out to 500 yards, as far as I've ever pulled the trigger on any unwounded animal larger than a coyote. IMR-7977 turned out to be both fast and accurate, and I'd cleaned the bore before doing any shooting, removing some "original" copper fouling. After test-shooting several dozen rounds, no copper was found during a second cleaning.

Now Roy's fine, old hunting rifle just needs to go hunting again. **R**



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Mostly Long Guns

(Continued from page 11)

don't believe that the 6.5's popularity is a short-term trend. It appears they are here to stay because of exemplary performance in the field and on the range.

The 6.5-300 Weatherby Magnum will initially be offered in two Mark V variants, the Accumark and Ultra Lightweight, with retail pricing starting at \$2,300. Standard barrel length is 26 inches, while the Lightweight model will receive a muzzle brake. Weatherby barrels are hand-lapped, match-grade stainless steel, with the 6.5-300 being fitted with a one-in-8-inch twist rifling, which will stabilize a wide range of bullet weights.

The Mark V rifle is also being upgraded for 2016, with more distinctive stock lines that are reminiscent of the early rifles, and there is a new trigger that boasts of better ergonomics and comfort for all shooters regardless of their

finger size or shape. The trigger assembly unit is completely redesigned and precision ground for a smoother, crisper let-off and is adjustable to 2.5 pounds. I tried this trigger and was impressed with its crispness and minimal after-travel. Another important new feature for 2016 is guaranteed sub-MOA accuracy for all Mark Vs with factory loads or equivalent premium ammunition.

I recently used the new 6.5-300 Weatherby Magnum on Wyoming antelope. Long-range shooting – especially on big game – is an art, and everything must be exactly correct to be successful and humane. There was precious little time to really dial in this rifle to allow precise long-range work, so after looking over a number of respectable bucks, I found a black-faced old-timer that displayed uniform and heavy horns – a beautiful animal. Rather than attempting a long shot, I stalked within 145 yards. When the old buck stood up and faced me at a quar-

tering angle, I aimed at the point of the shoulder and shot. The buck fell instantly and appeared to expire before hitting the ground. The Barnes 127-grain LRX bullet penetrated through the vitals and exited the ribs. A fellow hunter took his buck at nearly 250 yards and at a similar angle, with virtually identical terminal performance.

After the hunt there was an opportunity to chronograph the pre-production factory handloaded ammunition. Using the previously mentioned Barnes 127-grain LRX load at Wyoming's 5,000-plus elevation, a five-shot string produced an average of 3,450 fps, with the extreme spread measuring just 27 fps. It will be interesting to test and evaluate production loads as they become available. With suitable powders and a great selection of hunting bullets, demand for Weatherby's new, high-velocity 6.5-300 cartridge is expected to be high. R



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2. The owner is Polacek Publishing Corporation, 2180 Gulfstream, Ste. A, Prescott AZ 86301.
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DONALD R. POLACEK, President

Spotting Scope

(Continued from page 8)

to the 1903. The 1903 only lasted three years, becoming the Model 1906 when rechambered to .30-06. Most authorities on the Krag state the standard bullet weight was 220 grains, but according to Phil Sharpe's *The Rifle in America* (1938), military records show a 230-grain cupronickel jacketed bullet was standard from 1892 until 1896, whereupon the weight was reduced to 220 grains.

The laundry list of changes doesn't appear to include any to the rear sight when the bullet weight was changed. The label on a box of Remington ammunition with 180-grain roundnose bullets states the use of those loads may require a taller front sight or a lower rear sight to accommodate the variation in trajectory when compared to the standard 220-grain load. (Similar cautions were printed on boxes of Winchester ammunition with High Velocity loads using lighter bullets than standard in several lever-action cartridges/rifles.)

One of the interesting notes I ran across in Sharpe's book described the U.S. Army shooting team's preference for the Krag Model 1896, owing its superior

accuracy over the 1903/06, and it wasn't until the government literally decommissioned the Krag in 1906 that the shooting teams were forced to quit the Krag. Sharpe also lists a number of changes to the Model 1892 that were incorporated in the Model 1896 that tightened tolerances, resulting in increased accuracy of the latter. All the changes were made to the 1892 and standard in the Model 1896. There was also a Model 1898 rifle and a Model 99 carbine, the latter of which is the model number on the carbine Lester brought home in 1956.

A common comment regarding the Krag was that it was relatively weak, owing the single locking lug at the front of the bolt as opposed to more modern bolt actions, such as the 1903/06 that had two locking lugs. Interestingly, this appears to have come up only after the two-lug bolt became common. On the other hand, government literature states that while there was only a single locking lug, the rear of the bolt guide serves as an additional safety feature as it locks up on the right side of the rear receiver bridge. None of the authorities, however, mention the base of the bolt handle that locks up in the recess at the rear of the receiver. No doubt, the front lug and the rear of the bolt guide would have to give .002 to .003 inch for the handle to come into play, but it does, nevertheless, serve as an additional safety feature where a cartridge might develop pressure significantly in excess of the 40,000 CUP standard for the rifle/cartridge.

If the Krag offers a legitimate concern over strength limitations, it would be the use of common "ordinary" steel that was case-hardened and preceded the use of more modern steels that were heat-treated.

Of course, none of the above is to suggest that anyone should proceed head long with handloads that exceed long established pressure standards for the .30-40 Krag. It is only to correct idle comments that are all too often taken as fact.

On a more trivial note, John

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Milius, who wrote the script and directed the TNT movie *Rough Riders* (1997) saw fit to include Krag carbines and some Winchester Model 95 .30 U.S. carbines in the story line. A few months prior to the formal organization in San Antonio, Texas, of what became known as the Rough Riders, Theodore (Teddy) Roosevelt, who was Secretary of the Navy at the time, was told in no uncertain terms to make sure the troops had the new Krag smokeless carbines to fight the Spanish. Roosevelt wrote later in his book *Rough Riders* that some Winchester Model 95 .30 U.S. carbines were used in Cuba but were not government issue and were brought as personal rifles by a few of the volunteers. Since the troops landed in Cuba in late 1898, there might be some question about which model numbers of the Krag rifles/carbines were shipped to Cuba. It would appear in retrospect, however, that the Model 99 carbines were so numbered to avoid confusion

with the Model 98 rifles and carbines and may not necessarily represent the actual year they were issued. Who knows, maybe Lester's carbine went to Cuba.

Fortunately, Alicia is familiar with firearms as a result of growing up in our home. She also became quite proficient with the Beretta M92, M16 and other small arms while serving in the U.S. Air Force in two combat zones and a third tour in South Korea. I described the Arisaka, Krag and Remington Model 760 as the only rifles I knew about, but there could be others from Allan's estate. Sometime later, she found the two old military rifles, but there were legal details regarding the two estates to tend to. By the early months in 2015, the two estates were sorted out, and since we were to have a family reunion at son Jason's home in Idaho, Alicia would bring the military rifles. The fate of the Model 760 is unknown.

So, for now at least, the Krag

and the Arisaka are reunited with the Mass. Arm Co. single-shot, 12-gauge shotgun I used to almost single handedly wipe out the pheasant population near our home in the early 1950s. Symbols of a misspent youth, no doubt, but fond reminders of the days when every pickup truck in Douglas County had a rifle rack in the rear window, supporting a Winchester Model 94 or some modified version of a military rifle. It was a time when the only vacation folks took was when logging companies and schools shut down for the first week of deer season, and each member of the family had a deer tag and was jointly responsible for putting meat on the table. Mom used to say it was the only time she could get the whole family together, most of us being busy with jobs, school work, sports and/or extracurricular activities. For a 12-year-old with a few cartridges in his pocket, a rifle in his hands and hills to climb before sunset, it was the best of times. R




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ROGER'S GUN WORKS

CUSTOM CORNER by Stan Trzoniec

When Roger Ferrell said he had something different, it turned out to be a Gibbs rifle with all the trimmings. Patented in 1872, the Gibbs Farquharson rifle has had a respectable following; enough, in fact, that Bill Ruger took up the idea and made it into one of his well-known rifles – the No. 1.

According to Roger, this example is one of the later model actions that was made near the patent expiration date of 1895 by George Gibbs of Bristol, England. This is one of his “first quality” rifles with full engraving of the action. Roger noted that when the rifle had come to him to restore, it was in excellent shape except that the bore and the chamber were unserviceable, and the original forend had been changed. In his shop, the rifle was rebuilt as close to the original as possible but with the added convenience of a scope and mounts. For this, a vintage Lyman Alaskan 2.5x scope in Talley rings was used.

The stock is Turkish walnut finished to original dimensions and a rich luster. Roger added the horn

heel and toe caps, a neatly checkered butt and a horn forend tip. To preserve the unique look of the rifle, there was no effort to include custom panels or checkering patterns.

Metalwork included additional polishing and color casehardening of the action. The original engraving patterns were good as is, and a quarter-rib and a front sight integral with a sleeve were soldered to the barrel. Ferrell did all the metalwork and the stock profiling and finishing. Mark Swanson did the work on the quarter-rib.

This rifle checks in at 6¼ pounds. Chambering is the .256 Gibbs. According to Roger, both this and the .256 Mannlicher are English names for the 6.5x53R used in Dutch and Romanian military rifles of the time. It was favored by British red deer hunters for its higher velocity over the .303 British, and cases for the .256 Gibbs are easily formed using .303 British brass.

Roger Ferrell can be contacted via e-mail: rogersgunworks@yahoo.com. R





ROGER'S GUN WORKS



The Balvar 8

(Continued from page 45)

internal adjustments. The 8A remained in the Custom line, while its equivalent in the Trophy (internal adjustment) line was the Balvar 8B.

By this time, the scope world had changed radically. There were many more manufacturers, and variables were commonplace. Bausch & Lomb's history as a maker of riflescopes was about to draw to a close. In 1971, it purchased Bushnell and began a series of corporate maneuvers in which sports optics was turned over to Bushnell and Bausch & Lomb left the field entirely for more than a decade. When the name returned in 1983, it was with a line of scopes made in the Far East, marketed as Bushnell's premium line.

After the merger with Bushnell,

the Balvar 8B quietly exited, stage left. What it left behind was a rifle-scope world that had changed dramatically, and it was responsible for many of those changes. The Balvar 8 set a standard for ruggedness and durability for the rest of the world to match. It did the same in optical quality, with its precision lenses and lens coatings. It solved the problem of enlarged reticles in such a way that it forced its competitors to come up with their own solutions. Finally, it set a new standard in power ranges for variable scopes. Its 2.5-8x range raised the bar significantly and became a standard for the next 40 years.

Another Bausch & Lomb scope that should be mentioned is the Balvar 24, the company's entry in the ultra-varmint and target field that was then dominated by Unertl and the Lyman Target-Spot. It was the first variable to really make a mark in that demanding field. According to Bob Bell, B&L originally intended to market two variables –

a 6-12x and a 12-24x – but found it could put it all into one 6-24x variable. At a four-times magnification ratio, this was unheard of.

The price was also unheard of. In 1962, the Balvar 24 retailed for \$239.50, a cool C-note more than the most expensive Unertl (\$140.) Few indeed were the shooters who could afford one, but many were the shooters who lusted after one.

The Bausch & Lomb name disappeared from riflescopes for good around 2002. Having spun off its sport-optics division to become Bushnell once again, and licensed the use of the Bausch & Lomb name for a premier line, it withdrew the licensing as “incompatible” with a health-products company. Bausch & Lomb, the greatest name in American optics, is now an eye-care products subsidiary of a Montreal pharmaceuticals company. Still, it's a name that deserves to be remembered. The company and its scopes *were* revolutionary. R

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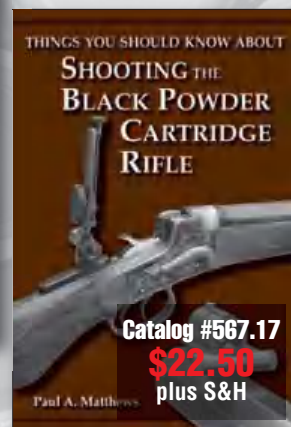
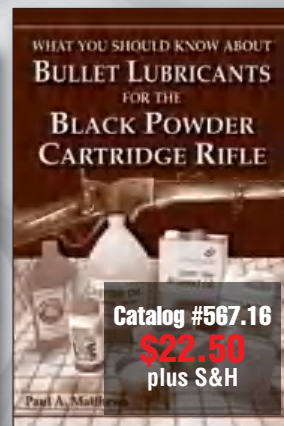
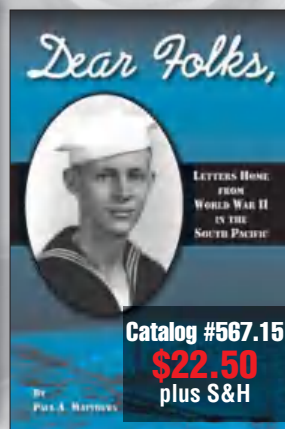
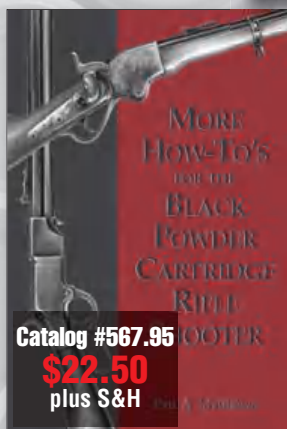
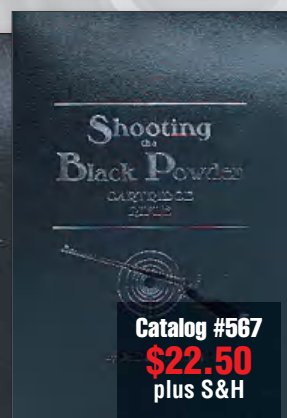
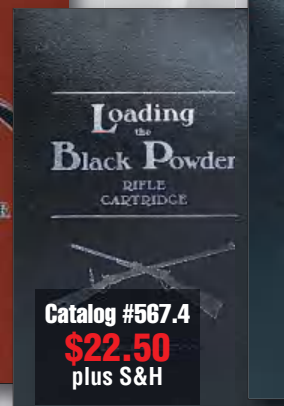
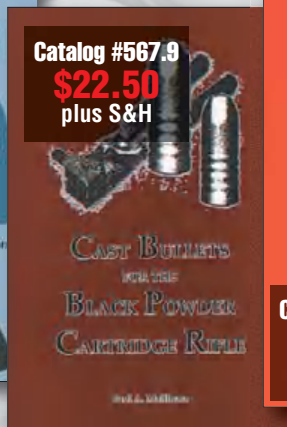
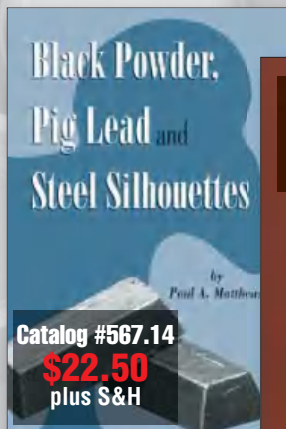
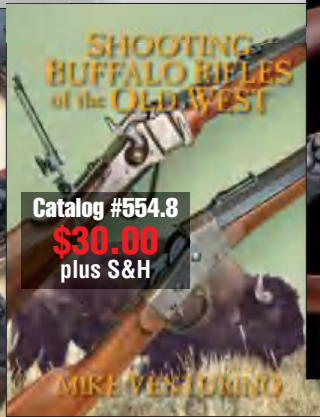
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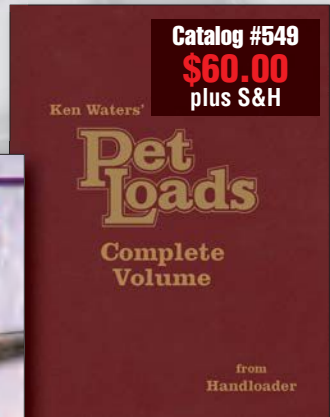
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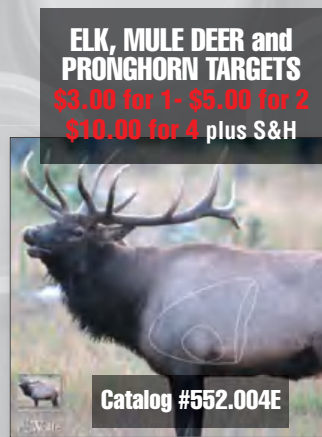
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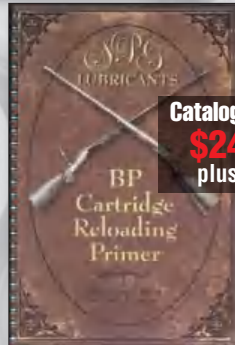
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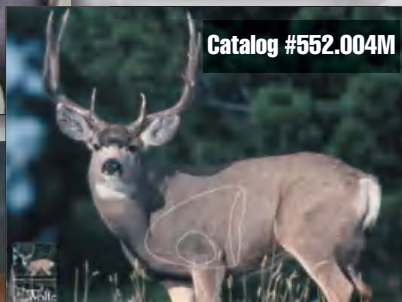
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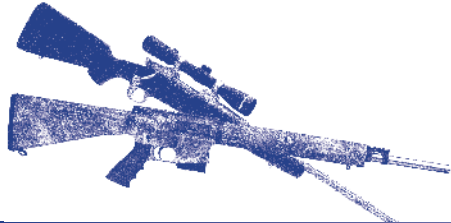
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LYMAN REVOLUTION ROTATING GUN VISE

PRODUCT TESTS by R.H. VanDenburg, Jr.

Recently I began using the Lyman Revolution Rotating Gun Vise. Not only does it handle all my rifles better than my old vise did, but it also easily accommodates tilt-barrel rifles and shotguns, and most handguns.

The vise consists of two mounting bases, a butt assembly and a forend assembly. The assemblies are connected via two guide rods and can be moved according to the gun to be cleaned or worked on: far apart for rifles and close together for handguns. There is also a tray that fits over the guide rods to hold small parts and tools. Easy-to-follow assembly and usage instructions are included.

The rear assembly holds the rifle or shotgun buttstock or grip area of a handgun in opposing padded jaws. The front assembly consists of a forend base, two inserts and a forend cover. With most rifles, only the base and cover will be used. For certain handguns or small-caliber rifles, installing the inserts may be necessary. The larger insert attaches to the forend cover; the smaller insert to the forend base. With the forend or barrel of the gun in place, the forend cover is snapped onto the base, securing the firearm.

Once the gun is in place, the front and rear assemblies may be turned about 45 degrees to one side or the other. There are cutouts on the mounting bases for holding cleaning rods when not in use.

When testing the vise, bolt-action and falling block rifles were easily accommodated. Lever actions that requiring cleaning from the muzzle were secured lever up. Break-open guns, such as my Savage Model 24 .22/410, were a snap to clean. Side-by-side or over/under shotguns can be accommodated as well, but I'm less certain



leaving them assembled to clean is the best approach. Break-open guns, such as the AR-15 platform, are a natural for the vise.

With handguns, the vise becomes a revelation. Cleaning a break-open gun, such as a Contender or Encore, is so much easier when using the vise. With the vise holding the pistol, I cleaned the barrel from the breech while guiding the cleaning rod with my other hand. I even cleaned a Colt Government Model. With the gun secured in the vise and the slide locked back, I cleaned the barrel from the muzzle. Single-action revolvers were much easier to clean from the muzzle while held in the vise, with a free hand to guide the cleaning rod. Cylinders still have to be held in one hand while cleaning the chambers, but overall cleaning time was significantly reduced. With a double-action revolver secure, the barrel was cleaned from the muzzle and the chambers of the swing-out cylinder from the other end without having to adjust or change anything. I did hold onto the cylinder with one hand as I scrubbed the chambers with the cleaning rod in the other.

I've never found handgun cleaning to be so simple or efficient and spent one whole day cleaning handguns, even some that didn't need

it – a task that would have taken several days without the vise.

Given the nature of the guide rod design, the vise has no bottom. This means cleaning fluid or solvent spills, a natural adjunct of gun cleaning, will end up wherever the vise is placed. For my part, lots of newspapers were used. I also cap the muzzle of rifle barrels with a device designed to capture fluids expelled from the muzzle. The vise's bases have mounting holes for permanently mounting the vise to a surface or for attaching a bottom. To maintain the adjustability of the vise, only the rear base should be secured.

In the instructions, there is a clear notice that any chemicals or solvents that come in contact with the vise should be wiped up immediately. During testing, solvent spills on the gray plastic components wiped up without any problems. In the case of the tray with its clear plastic cover, contact brought an immediate chemical reaction, and now the clear cover is clouded for all time.

Not a nit but a recognition of its limitations: The vise is not going to accommodate pocket pistols, and revolver barrel lengths are likely limited to 4 inches or so. A small price to pay, it seems to me, for an extremely useful accessory. www.lymanproducts.com **R**

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Walnut Hill

(Continued from page 66)

the controversy unfolded. At times it almost reached the stage of libel suits.

In the course of it all, the .30-06 rather got lost in the shuffle. Keith called it the world's "most over-rated big game cartridge" and recounted various incidents of its failures. O'Connor, being a professional journalist, often attempted to contact the people involved to find out what really happened. If the incident occurred at all – and some did not – they were usually attributable to either poor bullet placement or bullet failure.

If Jack O'Connor had a second-favorite cartridge, it was probably the .30-06, although the 7x57 was another candidate. He unreservedly admired and used them both. From the time he qualified "Sharpshooter" on the military Springfield at the age of 13 until the end of his life, he was never without at least one .30-06 – and usually more. Even during the Great Depression, when times were extremely tough and O'Connor was down to one high-powered rifle (plus a 20-gauge shotgun and a .22), that rifle was a .30-06. We should be careful about reading too much into that, but he would not have chosen to keep a .30-06 over his first .270 Winchester if he did not think highly of it. After all, game meat comprised a large part of the O'Connor diet, and the rifle provided it.

O'Connor wrote four books devoted to rifles, beginning with *The Rifle Book* (1949) and ending with *The Hunting Rifle* in 1970. In between were *The Big-Game Rifle* (1952) and his all-time best-seller, *The Complete Book of Rifles and Shotguns* (1961). You would expect considerable overlap in those books, but there is not. He uses different approaches in each, and it all adds up to a lot of very sensible advice.

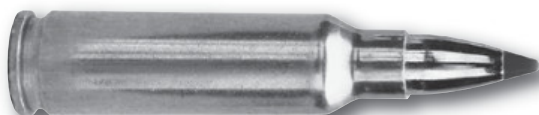
In 1959, late in his career, the O'Connors made a safari in Africa. Eleanor O'Connor used a 7x57, while her husband took only a

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.30-06 and a .375 H&H. He considered the .30-06 the “most all-around useful” light rifle for Africa, which is still true today.

By the time he published *The Hunting Rifle* in 1970, O'Connor was 68 years old and nearing the end of his career at *Outdoor Life*. We can safely take what he wrote in that book to be the conclusions of a lifetime's experience. He lumps the .270, .280 Remington and .284 Winchester in together as being so similar as to be indistinguishable in field performance, but he devotes a separate chapter to the 7x57 and another to “The Indestructible .30-06.”

After he left *Outdoor Life*, O'Connor wrote for *Petersen's Hunting* for a couple of years. In one piece for that magazine, he called the .30-06 “the work-horse of the hunting caliber” and noted that during his lifetime he had used the .30-06 on “mule and whitetail deer, elk, moose, black bear, grizzly, pronghorn antelope, sheep, coyotes, jackrabbits, caribous, greater kudu, zebra, and a whole flock of African antelope. . . .” He also pointed out that when his wife, Eleanor, felt her favorite 7x57 was a little light, she used a .30-06 as her “heavy” rifle. With it, she killed two tigers in India and an elephant in Africa.

O'Connor was never a one-caliber man. Quite the opposite. He wrote that during the 1920s and most of the 1930s, he did most of his hunting with a .30-06; elsewhere he states that between 1925 and 1931 he did most of his hunting with his first .270, a Winchester Model 54 purchased in 1925. Those statements are not contradictory. Finally, he noted that he did not buy his second .270 until 1938, so he was without one for a long period. During that time, he was a .30-06 man but hunted occasionally with a 7x57.

To his mind, the great advantage of the .30-06 over the other two was its versatility, largely due to the wide range of bullet weights and types available for it. In its early days, one could get 110-, 125-, 130-, 150-, 180- and

220-grain bullets; later, premium 165- and 200-grain bullets were offered. These afforded loads for everything from woodchucks to Alaska brown bears, although the rifle would not be ideal for either.

Today, many people see both the .270 Winchester and .30-06 as old hat, denigrated every which way as lacking power or accuracy and not being chambered in the latest here-today-gone-tomorrow

synthetic *wunderkind*. Fashions do come and go, and it says a lot for the .30-06, especially that it has survived every fashion in cartridges that has come and gone since 1906. It did so on merit, not sentiment.

I suspect, 50 years from now, hunters will still be reading Jack O'Connor, and they will still be shooting .30-06s. In the long run, common sense never goes out of fashion. R

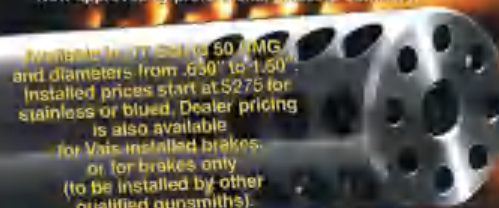
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JACK O'CONNOR AND THE .30-06

WALNUT HILL by Terry Wieland

The name of Jack O'Connor is inextricably linked with the .270 Winchester, a cartridge he discovered early, championed always and hunted with, to great effect, throughout his life. O'Connor's admiration for the .270 in the pages of, mainly, *Outdoor Life*, fueled a controversy that raged for years. It pitted O'Connor and his admirers against Elmer Keith and his. Keith et al. favored heavier bullets and lower velocities. This battle was fought in books, magazine articles and the "Letters" pages of the Big Three.

All this is not new, and I am not going to argue one point of view or another, since O'Connor and Keith were both right, if anyone cared to read what they actually wrote. Anyway, most of the real vitriol oozed from their followers. As with the Internet, everyone was too busy composing his next semiliterate diatribe to pay any attention to what anyone else was saying.

Today, there's a general assumption that O'Connor not only loved the .270 Winchester, but that he loved nothing *but* the .270, and that is far from the truth. There were several other cartridges he very much admired, including the 7x57, .257 Roberts, .280 Remington and, not least of all, the .30-06.

That list has a common theme: By today's standards, they are all midrange cartridges good for the "whitetails to elk" class. They can be chambered in light rifles with shortish barrels and perform well. Such rifles are comfortable while climbing a mountain or fit easily in a saddle scabbard.

Something else that is generally forgotten is that the very first clash was not between proponents of the .270 Winchester and the so-called "big-bore boys" but between the .270 and the .30-06. In the years immediately after the Great War, sporterized Springfield .30-06s were the rifle du jour among the cognoscenti, like



Between 1949 and 1970, Jack O'Connor wrote four books on rifles and made his feelings for the .30-06 clear: He loved the cartridge, considered it more versatile than the .270 Winchester and was never without one.

Stewart Edward White, Townsend Whelen and Capt. E.C. Crossman. When the .270 Winchester was introduced in 1925, it was regarded as an upstart, and there were long arguments as to whether it could match the .30-06.

Later, when the .270 began to attract adherents (including O'Connor), Keith and the proponents of big cartridges like the .348 Winchester really began to weigh in against it. This caused a general realignment of forces, and suddenly the .30-06 found itself in the high-velocity, light-bullet camp with the .270, squaring off against the big bores. O'Connor himself regarded all this with sardonic amusement, except when the attacks became viciously personal or completely outlandish. In *The Last Book - Confessions of a Gun Editor*, O'Connor devotes a chapter to "The Big-Bore Boys" and how

(Continued on page 64)

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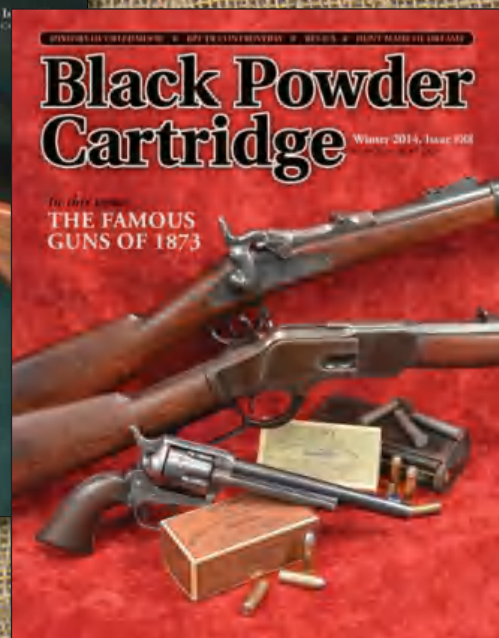
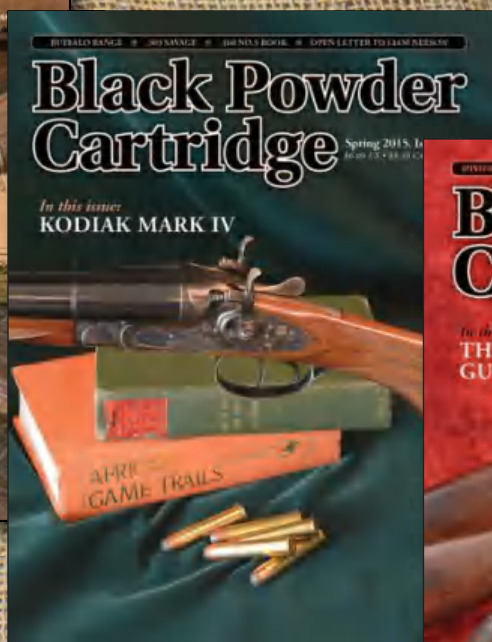
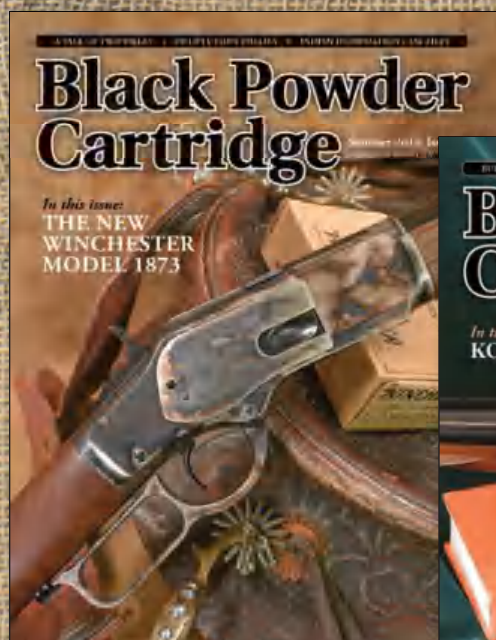
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